System Programming for the AD1650B MicroPower EP System

Programming and Operating Instructions

This manual describes the system programming and operating procedures for the American Dynamics AD1650B MicroPower EP Matrix Switching System. The AD1650B MicroPower EP is a CCTV surveillance system for multiple video inputs, multiple video outputs, and multiple control stations. The AD1650B is capable of controlling a maximum of 128 video input sources such as cameras and a maximum of 16 video outputs such as monitors and video tape recorders. Menu-driven programming is provided on the AD1650B for most system setup operations. Non-menu setup of monitor display format, camera preset scenes, alarm arming/disarming, and individual Monitor Tours are provided using keyboard commands.

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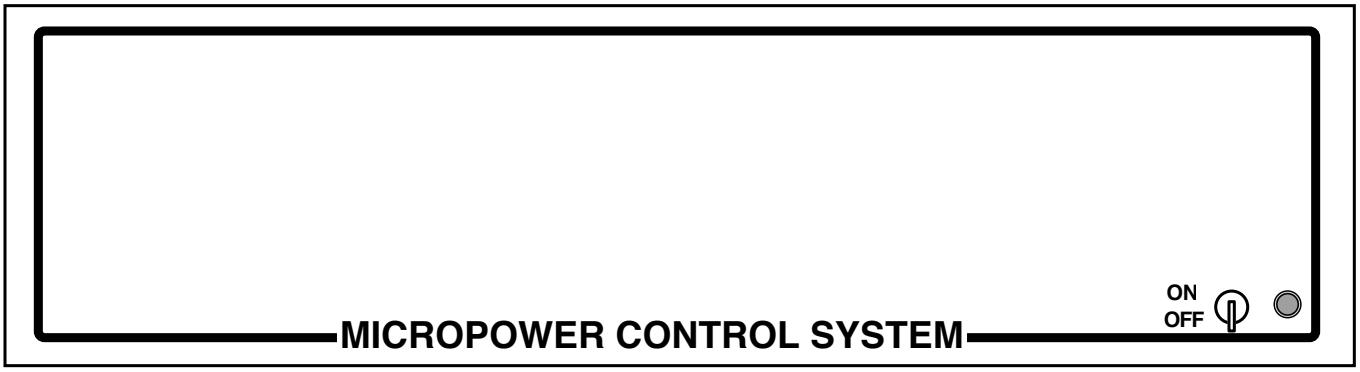

AD1650B MicroPower EP System

AD1650B DESCRIPTION

The AD1650B MicroPower EP Matrix Switching System is a CCTV surveillance system having multiple video inputs, multiple video outputs, and multiple control stations. The AD1650B is capable of controlling a maximum of 128 video input sources such as cameras and a maximum of 16 video outputs such as monitors and video tape recorders.

This manual describes the setup, programming, and operating procedures of the AD1650B. Refer to the AD1650B Installation Instructions Manual, OP1650B, for the system installation procedures.

SYSTEM FEATURES

Video Switching Control: The AD1650B controls video switching of all camera inputs and all monitor outputs in the switching system. Switching is performed in response to operator keyboard request or by automatic action via programmable Tours, System Salvos, Timed Events, or Alarm Response.

Tours: A Tour is an automatic sequence of camera inputs displayed on a single monitor. Each camera is displayed for a set period of time ("Dwell Time"). A Tour can include the same camera multiple times, and is reversible. Tours are identified in the AD1650B as Monitor or System Tours.

Monitor Tours ("Scratch Pad Tour"): A Monitor Tour is a temporary sequence of cameras which is programmed for an individual monitor. A Monitor tour may contain 64 cameras, with a dwell time for each camera.

System Tours: A System Tour is a pre-programmed tour that is defined via AD1650B setup menus. Sixty-four separate System Tours can be programmed for callup, by operator or automatic timed Event, to any monitor at any time. Each tour may contain 64 cameras, with a dwell time, preset camera scene, and auxiliary action for each camera.

System Salvos: A System Salvo is a group of cameras that can be switched simultaneously to a contiguous group of monitors. Sixteen System Salvos can be programmed for operator or automatic callup. A maximum of eight cameras may be included in each System Salvo, with an optional preset scene and auxiliary action for each camera.

Timed Events: An Event is a user-programmable time slot that can be programmed for automatic callup of System Tours and Alarm Contact Tables. Thirty-five separate Event Timers can be programmed, each set for callups at a specific time of day, on any days of the week, week after week.

System Tour callup: Each Event Timer provides automatic callup of any System Tour to any monitor.

Alarm Contact Table callup: Each Event Timer can call any Alarm Contact Table (see Alarm Response below) to dynamically change alarm contact-to-monitor associations.

Alarm Response: An Alarm is a signal generated by an external device (sensors, etc.) connected to the AD1650B, referred to as an alarm contact. A maximum of 512 separate alarm contacts can be programmed for automatic callup of cameras to monitors on activation (receipt) of the alarm.

Alarm Camera Programming: Each alarm contact can be programmed for callup of a specific camera or camera salvo on receipt of the alarm, including a dwell time, preset camera scene, and auxiliary action for each camera.

Alarm Monitor Programming: Each alarm contact can be programmed for display (of the associated cameras) on specific monitors. Four separate Alarm Contact Tables can be programmed for alarm contact-to-monitor associations, for call up by Event Timers.

Each monitor used for alarm displays can be armed for different alarm display and clearance methods.

(Refer to the Appendix, pages A-3 to A-7, for an overview of Alarm Programming.)

System Status Display: The current camera-to-monitor switching assignments can be displayed by operator request. This display includes the current status of each monitor, and identification of System Tours currently operating.

Input Identification: The AD1650B provides on-screen identification of all video inputs. On-screen identification includes the current time and date, the camera input number, input status, and a programmable 16-character camera title.

User-Assigned Camera Numbers: Any camera input can be assigned a user-defined (Pseudo) camera number to suit individual installation needs.

Selectable Date/Time Display: The system's date format can be programmed as MM-DD-YY, DD-MM-YY, or YY-MM-DD. Time is displayed in a 24-hour format.

Status Line: The on-screen Status Line shows current information (alarms, dwell times, etc.) about the camera being viewed. A list of the different Status Line displays is provided in the Appendix, page A-8.

External Control Inputs: Four RS-232 ports and eight two-wire ports on the AD1650B allow system control via keyboards, computers, or other devices. Each RS-232 port can also be configured for printer alarm outputs, and for upload/download of system setup data. Each RS-232 port can be expanded, using the AD1981 Port Expander, to provide a total of 16 RS-232 control connections.

System Control Outputs: Control Code outputs are provided by the AD1650B to transmit switching and control instructions to other matrix system control units.

Camera Site Control: The AD1650B Control Code output provides control information for camera site Receivers for control of fixed or variable speed pan/tilts, motorized lens, auxiliaries, and stored presets at suitably equipped sites. Optional AD1691 Code Distributors and AD1683 Code Modems can be used to provide Control Code information over long distances or to multiple site locations.

Switcher Follower Action: When equipped with the optional AD2031 Switcher Follower units, the system can be used to switch audio circuits, activate graphic display boards, etc., for assistance in system control.

System Security: Several security measures are provided to restrict user access to the system and access to specific resources of the system.

Passcode Log On/Log Off : Operator passcode entry is provided to allow only authorized personnel to operate the system. Once passcode entry is enabled, the user must have a user number and a 6-digit passcode to gain control of the system through a keyboard. The passcode entry system allows a maximum of 48 users with separate passcodes.

Priority Access: Eight priority levels, assigned to keyboards and users, permit capture of cameras (pan, tilt, and lens control) by higher priority users and lockout of lower priority users. Each priority level is programmable for specific access restrictions.

Partitioning: Programmable partitioning is provided for restricting access to specific system resources.

Keyboard/Monitor Access: Prevents selected keyboards from accessing selected monitors.

Monitor/Camera Access: Prevents selected monitors from displaying video from selected cameras.

Keyboard/Camera View Access: Prevents selected keyboards from calling up selected cameras for viewing.

Keyboard/Camera Control Access: Prevents selected keyboards from controlling functions on selected cameras (e.g., Pan/Tilt/Lens/Auxiliaries).

Menu-Driven Setup: On-screen menus are provided for simplified AD1650B system setup and programming. The AD1650B menu display can be directed to a separate monitor or connected back to the system for display on any system monitor.

Memory Retention: User-programmed data is stored in memory and is battery-backed for a minimum of five years. The data stored includes date/time, input identification, system tours, system salvos, event timers, port configurations, system partitioning, and alarm programming information.

PC System Setup Software: An optional software package, AD1650SW11B, is available for a personal computer (PC). AD1650B system setup data can be uploaded and downloaded from a PC using this software. This software package provides menu programming and storage of all AD1650B system setup information.

System Operation

This section of the manual provides an overview of the system operation and setup programming functions.

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- System Keyboards 1-2
- Keyboard Control 1-2
- Non-Menu Programming 1-2
- Menu Programming 1-2

System Reset 1-3
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SYSTEM OPERATION

The AD1650B Central Processing Module controls all Matrix Switching System operation and provides programming menus for AD1650B System setup. Eight 2-wire keyboard ports are provided on the AD1650B. In addition, four RS-232 ports are provided for control inputs from keyboards, external computers, or alarm interface units.

Video switching and control functions are accessible through keyboards (or external computers) connected to these ports. For security purposes, certain keyboards have restricted setup programming capabilities. Refer to the appropriate keyboard installation manual and to the list of American Dynamics Keyboards provided in the Appendix, page A-9.

System Keyboards

Two keyboards are available for the 2-wire ports:

AD1672A - An operator two-monitor keyboard with pushbutton lens control and joystick for pan/tilt movement.

AD1678C - A limited system operation keyboard with pushbutton lens control and joystick for pan/tilt movement.

Several keyboards are available for use with the RS-232 ports:

AD2078 - A full-function system operation and programming keyboard with pushbutton lens control and vector solving joystick for pan/tilt movement.

AD1678CM - A full-function system operation and programming keyboard with pushbutton lens control and vector solving joystick for pan/tilt movement.

AD1677 - An operator keyboard with pushbutton lens and pan/tilt control.

AD1676B - An operator 5-monitor keyboard with pushbutton lens control and joystick for pan/tilt movement.

As a security feature, AD2078 and AD1678CM keyboards have a keyswitch for disabling all system setup functions. When the keyboard security key is in the vertical (Off) position (or has been removed when in this position), setup functions are not accessible. The video switching and control functions are still enabled in this position.

An external computer can be connected to an AD1650B RS-232 port for system control inputs. Video switching and control functions are provided, but setup programming capabilities are not accessible from an external computer. Refer to the Appendix, page A-10, for description of the Computer Control capabilities.

Keyboard Control (Section 2)

Video switching and control capabilities are provided from any American Dynamics keyboard. These system operations are "monitor oriented" in that a keyboard controls only those functions associated with the monitor under control of the keyboard. Keyboard control functions are:

- Keyboard Passcode Entry
- Video Selection - Monitor and Camera
- Controlling Cameras (P/T/L)
- Calling Preset Scenes
- Activating Auxiliaries
- Running Tours
- Calling Salvos
- Acknowledging Alarms

Non-Menu Programming (Section 3)

Non-menu programming is provided for many system setup functions. As a security feature, AD1678CM and AD2078 keyboards have a keyswitch for disabling these non-menu setup functions. Non-menu setup functions are:

- System Reset
- Setting Date Format and Day of the Week
- Monitor On-screen Display Arrangement
- Programming Preset Scenes
- Programming Monitor Tours
- Alarm Programming

Menu Programming (Section 4)

Menu-driven programming is provided from AD1678CM and AD2078 keyboards only. Setup security is provided by a keyswitch on the keyboards which controls access to the programming menus. Menu programming functions are:

- Setting Time and Date
- Programming System Tours and Salvos
- Programming Event Timers
- Programming Alarm Contact Tables
- Establishing Status and Arming of Monitors
- Assigning Pseudo Camera Numbers
- Assigning Camera Titles
- Establishing RS-232 Ports usage
- Establishing Keyboard, Monitor, and Camera Access
- Establishing User and Keyboard Priorities

System Reset

Following initial AD1650B system installation or a major re-configuration of the switching system, it may be necessary to clear all programmed information from the AD1650B, and reset the system to factory defaults.

User-programmed data is stored in memory and is battery-backed for a minimum of five years. The data stored includes date/time, input identification, system tours, system salvos, event timers, port configurations, system partitioning, and alarm programming information. System Reset clears this stored information from the AD1650B.

CAUTION - THE FOLLOWING COMMANDS ERASE ALL USER ENTERED DATA.

To clear and reset all AD1650B programming:

1. Turn the keyswitch on the keyboard to the PROG position.

   Note: System Reset is accessible from AD1678CM or AD2078 keyboards *only.*

2. Enter the following keyboard F2 code combination:

   "55 F2" (Enter the number 55, then press the F2 key.)

3. *Within three seconds*, enter the following keyboard F2 code combination:

   "99 F2" (Enter the number 99, then press the F2 key.)

Note: A built-in safety feature requires entering the "99 F2" command *within three seconds* of the "55 F2" command. If "99 F2" is not entered within the required three seconds, the system *will not* clear and reset.

When this combination of keys is entered, the AD1650B system clears and resets all user programmed functions (Tours, Salvos, Alarm Programming, Event Timers, etc.). System Reset resets the AD1650B programmed information to the factory default settings.

See Appendix, page A-2, for a list of the default settings.

IF YOU ENCOUNTER ANY PROBLEMS OPERATING THIS UNIT, OR NEED ASSISTANCE, CALL OUR TECHNICAL SUPPORT CENTER:

within the United States: **1-800-442-2225**
outside the United States: **(914) 624-7640**

Operating System Software Verification

When calling American Dynamics for assistance, the revision level of the AD1650B software may require verification.

To verify the AD1650B operating system software:

1. Turn the keyswitch on the keyboard to the PROG position.
2. Enter the following keyboard F2 code combinations:

   "70 F2" (Enter the number 70, then press the F2 key.)

Note: Operating System Software Verification is accessible from AD1678CM or AD2078 keyboards *only.*

In response, a 5-digit code, "UF*aaa*", is shown in the Status Line of the on-screen display (Figure 2-1, page 2-3). The last digit of this display code is a number which identifies the revision level of the AD1650B operating system software.

Keyboard Control

This section of the manual describes the standard AD1650B system video switching and control capabilities that are provided from an American Dynamics keyboard. These system operations are “monitor oriented” in that a keyboard controls only those functions associated with the monitor under control of the keyboard.

Keyboard Passcode Entry 2-2
- Passcode Logon 2-2
- Passcode Logoff 2-2

Keyboard Video Selection 2-3
- Calling a Monitor to a Keyboard 2-3
- Calling a Camera to the Monitor under Control 2-3

Controlling Camera Site Functions 2-4
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- Calling a Preset Camera Scene 2-4
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Running a Tour 2-5

Calling a System Salvo 2-6

Acknowledging an Alarm 2-6

KEYBOARD CONTROL

Keyboard Passcode Entry

Passcode entry is a security procedure to allow only authorized personnel to operate the AD1650B system. When USER IDS is enabled (see USER IDENTIFICATION menu, page 4-28), AD1677 and AD1676B keyboards cannot access the system.

The passcode entry system allows a maximum of 48 users with a separate passcode for each user. The system default passcode is 914365, for user number 1.

Note: The default user passcode should be changed to protect against unauthorized access to the system. User passcodes are changed by menu programming, see SET USER menu page 4-29.

When passcode entry (USER IDS) is enabled, an operator must have a user number and a user passcode to access the system, through an AD1678CM or AD2078 keyboard only. The following Passcode Logon and Logoff procedures must be followed to gain access to any control or programming functions in the AD1650B.

Passcode Logon

When an AD1678CM or AD2078 keyboard is initialized with USER IDS enabled, the keyboard displays the letters “UC” (User Code) in the CAMERA display section. This indicates that the user must log on to the system before gaining access to any AD1650B control or programming functions:

1. Enter the user number (1 - 48) on the keypad.
2. Press the ACK button on the keyboard.

   The system then prompts for the passcode by displaying “PSC” (Passcode) in the keyboard CAMERA display.
3. Enter the user's passcode, a maximum of six digits.

   (The default passcode for user #1 is 914365.)

   If an incorrect user passcode is entered, press the CLEAR button, then repeat step 3.
4. Press the ACK button on the keyboard.

   * If the passcode does not verify, a tone is sounded (if keyboard sound is enabled) and “UC” is displayed again. Press the CLEAR button and repeat steps 1 through 4.
   * If the passcode verifies, the keyboard MONITOR and CAMERA displays are cleared. This confirms that the keyboard is connected to the system and that a monitor can be called to the keyboard (page 2-3).

Passcode Logoff

When the user session is completed it is advisable to log off:

- Enter “99” on the keypad and press the keyboard “F1” key.

  or
- Press the “USER” key on an AD2078 keyboard.

Keyboard Video Selection

Note: Keyboard video selection is available from any AD keyboard connected to the AD1650B. The keyboard control functions described on the following pages (2-3 to 2-6) are restricted on certain keyboards. Refer to the appropriate keyboard manual, and to the list of AD keyboards in the Appendix, page A-9, for these restrictions.

System control functions are accessed from a keyboard by first placing one of the monitors of the system under the control of the keyboard ("Calling" a monitor to a keyboard) and then "Calling" cameras in the system to that monitor.

To "Call" a Monitor to a Keyboard:

1. If keyboard has an ENTER display, press the CLEAR button to clear the ENTER display.
2. Enter the number of the desired monitor on the keypad. (The ENTER display shows the number entered.)
3. Press the MONITOR (MON) button on the keyboard. The number of the *MONITOR NOW UNDER CONTROL* of the keyboard is displayed in the MONITOR display.

To "Call" a Camera to the Monitor under Control:

1. If keyboard has an ENTER display, press the CLEAR button to clear the ENTER display.
2. Enter the number of the desired camera on the keypad.

   Note: A video source must be connected to this input.
3. Press the CAMERA (CAM) button on the keyboard. The number of the *CAMERA NOW ON THE MONITOR UNDER CONTROL* is displayed in the CAMERA display.

The selected camera video input is now switched to display on the monitor under control.

When a camera is called to a monitor, an On-Screen Display is included in the bottom two lines of the video picture, as illustrated in Figure 2-1.

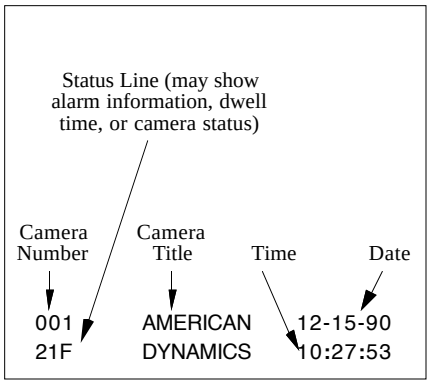

Figure 2-1 - On-Screen Display

The **Camera Number** identifies the camera being viewed; this is either the Real camera number, or the Pseudo number if one is assigned (see Camera menu, page 4-18).

The 16-character, 2-line **Camera Title** is blank until a title is entered for the camera (see Camera menu, page 4-19).

The **Time** and **Date** lines show the current system time and date (see Time and Date menu, page 4-4).

The **Status Line** shows current information about the camera being viewed (alarms, dwell times, etc.). A list of the different Status Line displays is provided in the Appendix, page A-8.

The orientation and contents of the on-screen display are changed by the non-menu programming function, Monitor Display Arrangement, page 3-3. Specific items of this display can be turned on and off from the Monitor menu, page 4-16.

Adjustments to the on-screen display position and brightness of each monitor are made with controls located on the associated Video Output Module of the AD1650B switching bay. Refer to the Video Output Module Setup procedures in the AD1650B Switching System Installation manual, OP1650B, for these adjustments.

Controlling Camera Site Functions

Camera site control functions (pan/tilt, motorized lens, preset scenes, and auxiliary actions) are available at the keyboard after a camera is called to a monitor.

- If the camera is being displayed as part of an operating tour, press the keyboard HOLD button to stop the tour on the desired camera. Refer to the procedure "To stop ("Hold") a tour" on page 2-5.
- Control of a camera (pan/tilt, lens, preset, and auxiliary) stays with a keyboard for *two seconds* after a controlling action or movement stops. If another keyboard attempts control of the same camera during this two-second period, these functions are temporarily not available and the message "LOCK" is displayed in the on-screen Status Line.

Camera View Control

Camera pan/tilt units are controlled using the keyboard joystick (or the pan/tilt buttons on an AD1677 keyboard); camera motorized lens units are controlled by the keyboard lens group buttons.

To control camera Pan and Tilt:

1. Call the pertinent camera to a monitor.
2. Hold the keyboard joystick (or press the pan/tilt button on the AD1677 keyboard) in the desired direction to move the camera.

   For control of variable-speed pan/tilt via AD1678CM or AD2078 keyboards, camera movement speed is in direct proportion to the position of the joystick; the further from center the joystick is moved, the faster the camera moves.
3. Center the joystick (or release the AD1677 keyboard button) when the camera is at the desired scene or view, as shown on the monitor.

To control camera Lens Iris, Focus, and Zoom:

1. Call the pertinent camera to a monitor.
2. Push and hold the keyboard LENS control function button designating the desired action (Iris OPEN/CLOSE, Focus NEAR/FAR, Zoom WIDE/TELE).
3. Release the button when the camera lens is at the desired iris, focus, or zoom position, as viewed on the monitor.

Certain AD Receivers are equipped for automatic pan/tilt operation (Autopan) using preset scene end stops. Refer to the following paragraph on Calling a Preset, and the appropriate Receiver Installation Manual for Autopan operation.

Calling a Preset (Pre-positioned) Camera Scene

If a camera is equipped with motorized pan/tilt and/or lens with feedback potentiometers, preset (pre-positioned) scenes may be defined for that camera for subsequent keyboard callup. Preset scenes are defined and stored at the camera Receiver by non-menu programming, page 3-3.

To call a preset scene:

1. Call the pertinent camera to the monitor.
2. Enter the number of the preset scene (1 - 72) on the keypad.

   Note: Preset number 72 is reserved for Autopan operation in certain AD Receivers.
3. On AD1600 series keyboards, press the SHOT button.
   On AD2078 keyboards, press the CALL button.

If a preset is called and no preset scene has been programmed for that number, no action occurs and the camera remains at the current scene.

For certain AD Receivers with Autopan, when preset 72 is called the camera automatically moves between preset scenes 70 and 71 (Autopan end stops). Autopan stops when another preset is called or any pan/tilt action is taken on that camera.

Activating an Auxiliary

The keyboard AUX ON/OFF buttons control both momentary and latched auxiliary actions at the camera site. The number and type (momentary or latching) of auxiliary functions at a site depends on the options installed on the camera Receiver at the site being controlled.

To activate an auxiliary:

1. Call the pertinent camera to a monitor.
2. Enter the desired auxiliary number on the keypad.
3. Press the AUX ON button to activate the auxiliary.
4. Release the AUX ON button.

   - If the auxiliary is a momentary type, the action stops.
   - If the auxiliary is a latching type, the action continues.
5. Press the AUX OFF button to deactivate a latching type auxiliary function.

Note: The current state of latching type functions, such as locks or gates, may not be discernible from the keyboard. If critical, operator feedback should be provided via a monitor or other device.

Running a Tour

A Tour sequentially displays a selected series of camera video inputs on a single monitor. A single tour sequence may display 64 separate cameras. Each camera is displayed for a set period of time (the Dwell Time).

Tours are created in two ways in the AD1650B. **Monitor Tours** are temporary tours defined by keyboard non-menu programming, page 3-4. **System Tours** are defined and saved by menu programming, page 4-5.

To start a **Monitor Tour**:

- Press the keyboard RUN button following programming of the tour (see page 3-4).

To start a **System Tour** (from the keyboard):

1. Call the monitor to run the tour on.
2. Enter the System Tour number (1 - 64) on the keypad.
3. Press the RUN button on the keyboard.
4. Press the keyboard ACK button *within three seconds* of pressing the RUN button.

   If the ACK button is not pressed within the 3-second period, repeat the above sequence from step 2.

System Tours also can be called (started) automatically by Event Timers (see page 4-10 to program Event Timer callup of System Tours).

Note: *Only one tour can be associated with a monitor at one time. If a Monitor Tour is programmed for a monitor and then a System Tour is called to that monitor, the Monitor Tour is replaced by the System Tour. The System Tour becomes that monitor's Monitor Tour.*

Once any tour is started, it is operated and controlled in the same manner, regardless of the method of starting the tour (operator or Event Timer). The tour repeats continuously until the operator performs a controlling action on that tour (as in the following paragraphs), or until another camera or tour is called to that monitor. The tour sequence is reversible.

System Tours may call additional System Tours in order to link a number of tours together for a larger camera sequence (see Connect Next feature of System Tours, page 4-5). If a series of System Tours are linked in this manner, the entire sequence repeats continuously only if the last tour calls the first tour to start the sequence over. If the last tour does not link back to an earlier tour, only that tour repeats continuously.

Viewing and controlling a tour:

While running, a tour repeats continuously.

- The monitor on-screen Status Line shows the dwell time for each camera displayed in the tour.
- While a tour is running in the forward direction, an "F" is displayed beside the dwell time; while running in the reverse direction, an "R" is displayed.
- On AD2078 keyboards, press the NEXT or LAST button to change the direction of the tour (to forward or reverse, respectively) at any time while it is running.

Note: When a tour is running in reverse, the tour linking feature may not operate as expected. The tour being called starts operation in reverse, at the *last* entry of that tour. Thus if the tour being called also has a link to another System Tour, that link is executed *first*, and the rest of that tour is not run. (See Connect Next, page 4-7).

To stop ("Hold") a tour:

- Press the keyboard HOLD button to stop a tour on the currently displayed camera.
- If a dwell time of 61 is programmed for a camera, the tour automatically stops and Holds on that camera.

When the tour is stopped by either of these actions, the monitor displays the camera that the tour is stopped on, and the message "HOLD" is displayed in the Status Line. While a tour is on Hold, any keyboard control actions (pan, tilt, lens, preset, or auxiliary, page 2-4) may be performed on that camera.

- Press the RUN button to resume running the tour.

To step through or change the direction of a tour on Hold:

- Press 1, then NEXT to set the tour to forward direction.
- Press 2, then NEXT to set the tour to reverse direction.
- Press the NEXT button to step to the next camera of the tour sequence and set the tour to forward direction.
- On AD2078 keyboards, press the LAST button to step back to the prior camera of the tour and set the tour to reverse.
- On AD2078 keyboards, press the B-PASS button to remove the held camera from the tour and step to the next camera.
- Press the RUN button to resume running the tour, in the direction selected.

While a tour is on Hold, the tour sequence can be modified via the Monitor Tour programming procedures, page 3-4.

Calling a System Salvo

A System Salvo is a group of cameras that can be called for simultaneous display on a contiguous group of monitors. System Salvos are defined by menu programming, page 4-8.

To call a System Salvo from a keyboard:

1. Call the *first* monitor of the contiguous group of monitors.

   Note: Ensure that there are sufficient system monitors following the called monitor to display the number of cameras in the salvo. If there are more cameras in the salvo than monitors available, the cameras at the end of the salvo with no matching monitors are not shown.

2. Enter the System Salvo number (1 - 16) on the keypad.
3. Press the keyboard SALVO button.

Note: System Salvos can be called from AD1678C/CM or AD2078 keyboards *only.*

System Salvos also can be called automatically from programmed System Tours, Alarm Contacts, and other System Salvos. See pages 4-5, 4-12, and 4-8 respectively for programming automatic System Salvos calls.

When a System Salvo is called, all cameras specified in the salvo programming, page 4-8, are called to and displayed on contiguous monitors, starting from the called monitor.

For Example: If a System Salvo containing six cameras is called to Monitor 11, the first salvo camera is shown on monitor 11, the second camera on monitor 12, and so on, up to the last camera on monitor 16.

The on-screen Status Line of each monitor displaying a salvo entry shows the word “SALVO”. If a salvo is called in response to an alarm contact, the monitor displaying the first camera of the salvo shows the word “ALARM” in its Status Line, and the monitors displaying the remaining cameras of the salvo show the word “SALVO” in their Status Lines.

Acknowledging an Alarm

When a monitor is armed for an alarm contact (ACN), the input video associated with that alarm contact is displayed on the monitor when the alarm is received. During the period that an alarm is active and being displayed on an armed monitor, the monitor on-screen Status Line shows the word “ALARM”. If this monitor is armed for Manual Clear, the alarm can be cleared by keyboard commands. (See Alarms descriptions, Appendix pages A-3 to A-7.)

To acknowledge (clear) an alarm from a keyboard:

1. Call the monitor which is displaying the alarmed video.

   Note: If a salvo (System Salvo or Connect Next salvo) is associated with the ACN, call the *first* monitor of the block displaying the salvo to acknowledge that alarm.

   If a Wired set is associated with the ACN, call the monitor associated to the ACN to clear that alarm.

2. If the monitor is sequencing multiple alarmed video inputs:

   - Hold or step to the desired alarmed input.

     or

   - Enter the applicable ACN number (1 - 512) and press the ACK button to call the associated alarmed input.

3. When the desired alarmed video is displayed, press the keyboard ACK button to clear the alarm.

   Note: If the ACN is in a Wired Set and is programmed with a “*****” CN code, *all* alarms in the Wired set are cleared when this alarm is cleared.

Alarmed monitors that are armed for Instant or Auto Clear are cleared automatically by the system (see Alarm Clearance, page A-4 of the Appendix).

Non-Menu Programming

This section of the manual describes the AD1650B system non-menu programming capabilities. These setup operations are accessed from AD1678CM or AD2078 keyboards only. As a security feature, these keyboards have a keyswitch for disabling these programming functions.

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NON-MENU PROGRAMMING

The following non-menu setup programming functions are accessible from AD1678CM or AD2078 keyboards only.

NOTE: The keyswitch must be in the Program (PROG) position for the non-menu programming functions.

System Reset

It may be necessary to clear all programmed information from the AD1650B, and reset the system to factory defaults.

CAUTION - THE FOLLOWING COMMANDS ERASE ALL USER ENTERED DATA.

To clear and reset all AD1650B programming:

1. Turn the keyswitch to PROG position.
2. Enter the following keyboard F2 code combinations:

   "55 F2" (Enter the number 55, then press the F2 key.)
   "99 F2" (Enter the number 99, then press the F2 key.)

There is a 3-second period after the "55 F2" command has been entered in which the "99 F2" command must be entered. If the "99 F2" is not entered *within the 3-second period*, the system does not reset.

When this combination of keys is entered, the AD1650B clears and resets all user programmed functions (Tours, Salvos, Alarm Programming, Event Timers, etc.). This action resets these programmed functions to the factory default settings. See Appendix, page A-2, for the default settings.

Operating System Software Verification

When calling American Dynamics for assistance, the revision level of the AD1650B software may require verification.

To verify the AD1650B operating system software:

1. Turn the keyswitch to PROG position.
2. Enter the following keyboard F2 code combinations:

   "70 F2" (Enter the number 70, then press the F2 key.)

In response, a 5-digit code, "UF*aaa*", is shown in the Status Line of the on-screen display (Figure 2-1, page 2-3). The last digit of this display code is a number which identifies the revision level of the AD1650B operating system software.

Setting the Day of the Week

The day of the week must be set prior to programming the Event Timers, page 4-10. Day of the week can be set from the keyboard, or via the Set Time and Date menu, page 4-4.

To set the day of the week from the keyboard:

1. Turn the keyswitch to PROG position.
2. Enter one of the following keyboard F2 code combinations:

   "61 F2" Sunday (SUN)
   "62 F2" Monday (MON)
   "63 F2" Tuesday (TUE)
   "64 F2" Wednesday (WED)
   "65 F2" Thursday (THR)
   "66 F2" Friday (FRI)
   "67 F2" Saturday (SAT)
   "60 F2" Displays the current day of the week, for three seconds, in the Status Line.

When a code is entered, the three-digit day code is displayed for three seconds in the Status Line of the on-screen display.

Setting Date Format

There are three options for the on-screen DATE format. The default DATE format is: MM-DD-YY. Date format can be set from the keyboard using F2 key combinations.

To set the date format from the keyboard:

1. Turn the keyswitch to PROG position.
2. Enter one of the following keyboard F2 code combinations:

   "21 F2" MM-DD-YY
   "22 F2" DD-MM-YY
   "23 F2" YY-MM-DD
   "24 F2" Toggles through the three date formats each time the code is entered.

Date format, day of the week, and the current time and date may also be set from the Set Time and Date menu, page 4-4.

Monitor Display Arrangement

The arrangement of the titles, date, and time in the monitor on-screen display (Figure 2-1) may be changed by keyboard commands. The default arrangement is titles, date, and time displayed at the bottom of the screen.

To change the arrangement of the on-screen displays:

1. Call the desired monitor.
2. Turn the keyswitch to the PROG position.
3. Enter one of the following keyboard F2 code combinations:

   "1 F2" Display time and date on the monitor

   "2 F2" Remove time and date display from the monitor

   "3 F2" Display camera title, camera number, and camera status on the monitor

   "4 F2" Remove camera title, camera number, and camera status from the monitor

   "5 F2" Display titles, date, and time at the top of the monitor screen

   "6 F2" Display titles, date, and time at the bottom of the monitor screen

   "7 F2" Display all titles, date, and time on the monitor

   "8 F2" Remove all titles, date, and time display from the monitor

Camera Lockout

Camera sites may be locked out by a keyboard to deny other keyboards from controlling the camera pan/tilt, lens, preset scenes, and auxiliary actions. Locked out keyboards may view, but not control, the designated cameras.

To lockout or unlock a camera:

1. Call or Hold the pertinent camera on the monitor.
2. Turn the keyswitch to the PROG position.
3. Enter one of the following keyboard F1 code combinations:

   "1 F1" Unlock the called camera

   "2 F1" Lock out the called camera

When a keyboard calls a camera which is locked out, the camera video is displayed on the monitor and the message "LOCK" is displayed in the on-screen Status Line.

Programming Preset Scenes

Motorized camera pan/tilt and lens units with preset capability (feedback potentiometers) can be controlled from AD 1640 or 1680 Series Receivers. A suitably equipped camera Receiver can store 72 preset scenes (71 scenes for certain AD Receivers configured for Autopan) for subsequent recall.

To set up and store a preset scene for later recall:

1. Call or Hold the pertinent camera on the monitor.
2. Turn the keyswitch to the PROG position.
3. Adjust the camera pan, tilt, zoom, iris, and focus to obtain the desired scene.
4. Enter the desired preset number (1 - 72) on the keypad.

   Note: Preset number 72 is reserved for Autopan operation in certain AD Receivers (see below).

5. Press the SET button.

Programmed Preset scenes may be called up by keyboard commands any time the associated camera is called to a monitor (see Calling a Preset Scene, page 2-4). Camera Preset scenes also can be called automatically from System Tours, System Salvos, and Alarm Contacts when the associated camera is called (see Menu Programming for these functions).

Note: If a Preset number is called and no preset scene is programmed for that camera, no action occurs and the camera remains at the current scene.

To configure Autopan end stops:

Certain AD Receivers are equipped for automatic pan/tilt operation (Autopan) using preset scene end stops. The Autopan end stops in these Receivers are set by saving two preset scenes, 70 and 71.

1. Call or Hold the pertinent camera on the monitor.
2. Turn the keyswitch to the PROG position.
3. Position the camera to the desired pan/tilt *start* position (first Autopan end stop).
4. Enter preset number 70, then press the SET button.
5. Position the camera to the desired pan/tilt *stop* position (second Autopan end stop).
6. Enter preset number 71, then press the SET button.

Autopan operation is started by calling preset scene 72, see page 2-4. Presets 70 and 71 are used as the Autopan end stops and may also be called as regular preset scenes

Programming Monitor Tours

A Tour sequentially displays a selected sequence of camera video inputs on any monitor. A Monitor Tour is a temporary sequence of cameras programmed for the called monitor.

A maximum of 64 cameras may be included in a Monitor Tour. Cameras may be entered in any order and as often as required. Each camera is displayed for a set period of time (dwell time).

To program a complete Monitor Tour:

1. Call the monitor on which the tour is to be run.
2. Turn the keyswitch to the PROG position.
3. Call the camera which is to be displayed first in the tour.
4. Enter "62" and press the PROG button. This puts the system in Tour Programming mode, and displays the dwell time of the called camera in the on-screen Status Line.

CAUTION: *The "62 - PROG" removes all cameras from the sequence for that monitor (sets all dwell times to "0") - do this ONLY to establish a completely new tour.*

Do not enter "62 - PROG" during the remaining steps. This removes all previously programmed cameras from the tour and necessitates complete tour reprogramming.

5. Enter "1" to "60" for the desired dwell time in seconds. To stop and Hold the tour on that camera, enter "61".
6. Press the keyboard PROG button. This sets the dwell time for the on-screen camera to the value entered.

   If no more cameras are to be included in the tour, skip to Step 8; otherwise, continue with Step 7.
7. Call the next camera to be included in the tour sequence. Cameras need not be inserted in the tour in numerical order.

   Repeat Steps 5, 6, and 7 until all cameras to be included in the tour have been programmed.
8. Press either the HOLD or the RUN button to leave tour programming.

   The HOLD button displays the picture from the last camera programmed on the monitor and leaves the tour on Hold. The RUN button switches the picture to the next camera in the tour and initiates the tour sequence.

To run a Monitor Tour

Following Monitor Tour programming, if the tour is on Hold press the RUN button to start the tour. Use the HOLD, NEXT, LAST (AD2078 only), and B-PAS (AD2078 only) buttons to control the tour, as described on page 2-5.

When a tour is running, press the HOLD button to stop the tour and Hold the camera being displayed. While a tour is on Hold, the tour may be re-programmed as follows.

To add a camera to a Monitor Tour:

1. Press the keyboard NEXT button until the tour is at the camera position to be added, then press the HOLD button.

   CAUTION: *Do not enter "62 - PROG" during these steps. This removes all previously programmed cameras from the tour and necessitates complete tour reprogramming.*
2. Call the camera to be displayed at this position of the tour. The called camera will be inserted in the tour at this point.
3. Enter the desired dwell time (1 - 60), or Hold (61).
4. Press the keyboard PROG button to set this dwell time.
5. Press either HOLD or RUN to leave tour programming.

To remove a camera from a Monitor Tour:

1. Press the keyboard NEXT button until the camera to be removed is displayed, then press the HOLD button.

   CAUTION: *Do not enter "62 - PROG" during these steps. This removes all previously programmed cameras from the tour and necessitates complete tour reprogramming.*
2. Enter "0" and press the PROG button to erase the current tour entry.
3. Press either HOLD or RUN to leave tour programming.

To re-program a single camera in a Monitor Tour:

1. Press the keyboard NEXT button until the camera to be re-programmed is displayed, then press the HOLD button.

   CAUTION: *Do not enter "62 - PROG" during these steps. This removes all previously programmed cameras from the tour and necessitates complete tour reprogramming.*
2. Enter "0" and press the PROG button to erase the current tour entry.
3. Enter the desired dwell time (1 - 60), or Hold (61).
4. Press the keyboard PROG button to set this dwell time.
5. Press either HOLD or RUN to leave tour programming.

A System Tour supercedes a Monitor Tour. When a System Tour is started on a monitor (see page 2-5), any tour currently programmed for that monitor is erased. After System Tour is called to a monitor it may be altered by the re-programming steps above. This does not permanently re-program the stored System Tour, but effectively "changes" it to a Monitor Tour.

Arming Monitors

System monitors are armed using a Monitor Arming Code which identifies the alarm Display method (Single, Block, or Dual monitors), Queuing method (Sequence or Hold), and the Clearance method (Instant, Auto, or Manual clear). The Monitor Arming Codes available in the AD1650B are listed at the right, and are described in the Appendix, page A-4.

To arm a monitor:

1. Call the desired monitor to be armed.
2. Turn the keyswitch to the PROG position.
3. Select the Monitor Arming Code desired for that monitor and enter the code number (1 - 15) on the keypad.

   If a Dual display code is selected (13 - 15), when the first (Hold) monitor is armed, the second (Sequence) monitor is automatically selected (the next numeric system monitor) and armed to the second Arm Type.
4. Press the ARM button in the keyboard Monitor group. The Arm Type (see table at right) is displayed for five seconds, in the on-screen Status Line, to verify the monitor arming.

For example: The Single/Sequence/Instant Clear arming code was selected for the monitor by entering the number 1 on the keyboard and pressing the Monitor ARM button. This results in the on-screen display shown in Figure 3-1.

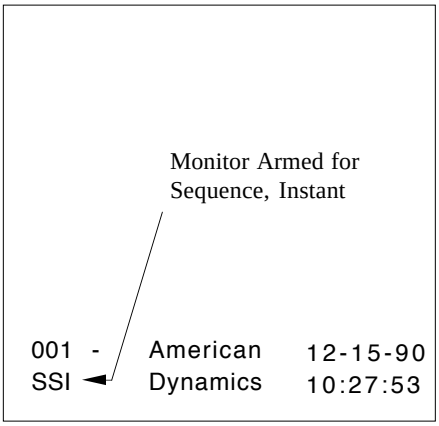

Figure 3-1 - On-Screen Monitor Arming Display

To disarm a monitor:

1. Call the monitor to disarm.
2. Turn the keyswitch to the PROG position.
3. Press the OFF button in the keyboard Monitor group.

To verify the monitor arming at any time, press the keyboard ARM button. The Arm Type is displayed for five seconds in the on-screen Status Line. If the monitor has not been armed or has been disarmed, the "DIS" code is displayed.

Note: *Monitor arming cannot be changed for any monitor if any alarm contacts are active in the system.*

Monitor Arming Codes

Code	Description	Arm Type
1	Single/Sequence/Instant Clear	SSI
2	Single/Sequence/Auto (after 20 seconds)	SSA
3	Single/Sequence/Manual (ACK key)	SSM A*
4	Single/Hold/Instant Clear	SHI
5	Single/Hold/Auto Clear	SHA
6	Single/Hold/Manual Clear	SHM A*
7	Block/Sequence/Instant Clear	BSI
8	Block/Sequence/Auto Clear	BSA
9	Block/Sequence/Manual Clear	BSM A*
10	Block/Hold/Instant Clear	BHI
11	Block/Hold/Auto Clear	BHA
12	Block/Hold/Manual Clear	BHM A*

		First Monitor Arm Type	Second Mon Arm Type
13	Dual/Hold and Sequence/ Instant Clear	DHI	DSI
14	Dual/Hold and Sequence/ Auto Clear	DHA	DSA
15	Dual/Hold and Sequence/ Manual Clear	DHM A*	DSM A*
16	Disarm monitor		DIS

* Manual Clear/Acknowledge is always enabled.

The Manual Clear/Acknowledge feature can be enabled or disabled for any Instant or Auto Clear arming code. This must be done *after* a monitor is armed with an arming codes. When enabled, the letter "A" is displayed after the Arm Type in the on-screen Status Line (e.g., SSI A). When disabled, the letter "A" does not appear after the Arm Type.

To enable or disable Manual Clear for Instant or Auto:

1. Call the desired monitor.
2. Turn the keyswitch to the PROG position.
3. Enter one of the following code numbers on the keypad:
   17 - to enable Manual Clear/Acknowledge
   18 - to disable Manual Clear/Acknowledge
4. Press the Monitor ARM button.

Monitors can also be armed using the Monitor menu, page 4-16. If a monitor block is desired, the Monitor menu must be used to define all monitors within the block.

Refer to the Appendix, pages A-3 to A-7, for description of Alarm Programming and Arming.

Programming Alarm Contacts

Note: The following contact programming procedures are for AD1678CM keyboards only. For other keyboards, use the Monitor/Contact Access menu, page 4-27.

To program a contact for a monitor:

1. Call the desired monitor.
2. Enter the alarm contact number (ACN) to be associated to this monitor for displays.
3. Press the ARM button in the keyboard Camera group.

The contact number with the letter "E", for enabled, is displayed in the on-screen Status Line for five seconds to verify the contact has been armed for that monitor.

For Example: Contact number 21 was programmed for the monitor by entering the number "21" on the enter pad and pressing the Camera ARM button. This will result in the on-screen display shown in Figure 3-2.

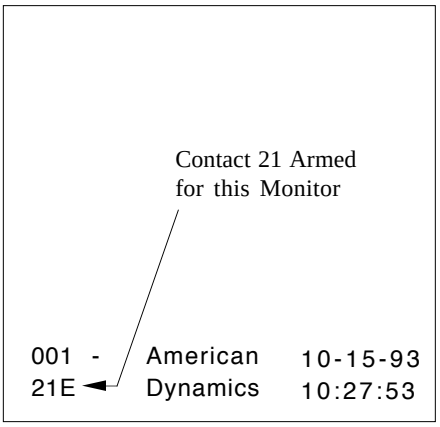

Figure 3-2 - On-Screen Contact Arming Display

Note: Monitors used for salvo alarm response should not be programmed for individual alarm contacts (see page 4-27).

To disarm a contact for a monitor:

1. Call the monitor.
2. Enter the contact number to be disarmed.
3. Press the OFF button in the keyboard Camera group.

The contact number with the letter "D", for disarmed, is displayed on the screen for five seconds to verify the contact has been disarmed for that monitor. That alarm input will no longer be displayed until the associated remote alarm contact has been deactivated and subsequently reactivated.

Note: Contacts cannot be disarmed while they are active.

Audio Alarm Indicators

AD1678CM and AD2078 keyboards can be programmed to provide an audio tone when an alarm is received. When the audio tone is enabled at a keyboard and an armed monitor is called to that keyboard, the audio tone is sounded when the associated alarm is first received, for less than five seconds.

The default setting is audio enabled (ON) for all keyboards. There are three ways to enable or disable this audio indicator: For a Keyboard, For a Port, and System Wide.

For a Keyboard - When sound is turned off at a keyboard, the AD1650B will transmit the sound character to all keyboards but a keyboard that is off will not sound the audio tone.

To Turn Audio ON for that Keyboard only:

1. Call the armed monitor.
2. Enter the number "9" on the keypad.
3. Press the auxiliary ON pushbutton.

To Turn Audio OFF for that Keyboard only:

1. Call the armed monitor.
2. Enter the number "9" on the keypad.
3. Press the auxiliary OFF pushbutton.

For a Port - When the audio is turned off for a port, the AD1650B will no longer transmit the sound character to that particular keyboard port.

To Turn Audio ON for a Port:

1. Enter the number "48" on the keypad.
2. Press the F2 button.

To Turn Audio OFF for a Port:

1. Enter the number "47" on the keypad.
2. Press the F2 button.

System Wide - When the audio is turned off system wide, the AD1650B will no longer transmit the sound character to any keyboard port.

To Turn Audio ON System Wide:

1. Enter the number "46" on the keypad.
2. Press the F2 button.

To Turn Audio OFF System Wide:

1. Enter the number "45" on the keypad.
2. Press the F2 button.

Menu Programming

This section of the manual describes the AD1650B menu programming capabilities.

Menu Programming 4-2
- Accessing the Menu System 4-2
- Exiting from the Menu System 4-2

Main Selection Menu 4-2
Cursor Positioning/Paging 4-3
System Menus 4-3
- Set Time and Date 4-4
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- Set System Salvos 4-8
- Set Event Timers 4-10
- Set Alarm Contacts 4-12
- Monitor Status 4-15

Monitor Menu 4-16
Camera Menus 4-18
- Pseudo Numbers 4-18
- Camera Title 4-19

Port Menu 4-20
Access Menus 4-22
- Keyboard/Monitor 4-23
- Keyboard/Camera View 4-24
- Keyboard/Camera Control 4-25
- Monitor/Camera 4-26
- Monitor/Contact 4-27

Priority Menus 4-28
- User Identification 4-28
- Set Keyboard 4-29
- Set User 4-29
- Set Priority Level 4-30

MENU PROGRAMMING

All the features of the AD1650B are programmable using on-screen menus. The menus are displayed via a separate video output (labeled PROG MON) on the rear of the AD1650B. This video output may be connected to a dedicated monitor or connected back into the video switching system for display on any monitor. *If PROG MON is connected to a switching system camera input, call that camera to view the menus.*

Accessing the menu system

Access to AD1650B menu programming is possible from an AD1678CM or AD2078 keyboard only.

Note: As a security feature these keyboards have a keyswitch to control access to the menus.

To access the menus using an **AD1678CM** keyboard:

1. Turn the keyswitch to the Program (horizontal) position.
2. Enter 129 on the keypad.
3. Press the PROG button on the keyboard.

To access the menus using an **AD2078** keyboard:

- Place the keyswitch in the DISP position.

Following these procedures, the MAIN SELECTION menu is displayed (next column).

Exiting from the menu system

When menu programming is completed, the user can exit from the menu system from any menu.

To exit the menus using an **AD1678CM** keyboard:

1. Enter 130 on the keypad.
2. Press the PROG button on the keyboard.

To exit the menus using an **AD2078** keyboard:

- Place the keyswitch in the OFF or PROG position.

```
MAIN SELECTION
- - - - - - - - - - - -
 1  SYSTEM
 2  MONITOR
 3  CAMERA
 4  PORTS
 5  ACCESS
 6  PRIORITY
```

MAIN SELECTION MENU

After the menu system is accessed, the MAIN SELECTION menu is displayed, via the PROG MON output, indicating the setup functions available.

To select a Main Selection menu function:

1. Move the cursor to the desired line.
   or
   Enter the number (1 - 6) for the desired line.
2. Press the ACK button to access that selection.

Each selection of the Main Selection menu brings up another menu, as illustrated at the bottom of this page. Refer to the following pages for each menu.

SYSTEM	pages 4-3 to 4-15
MONITOR	pages 4-16 to 4-17
CAMERA	pages 4-18 to 4-19
PORTS	pages 4-20 to 4-21
ACCESS	pages 4-22 to 4-27
PRIORITY	pages 4-28 to 4-30

In each of these menus, move the cursor to the RETURN MAIN line and press the ACK key to return to the MAIN SELECTION menu.

(See cursor positioning instructions, next page.)

```
SYSTEM                  MONITOR              CAMERA          PORT            ACCESS                        PRIORITY
1 SET TIME AND DATE     ARM TYPE    ACK      1 PSEUDO        BAUD            1 KEYBOARD/MONITOR            1 USER IDENTIFICATION
2 SET SYSTEM TOURS      TOUR                 2 TITLE         DATA BITS       2 KEYBOARD/CAMERA VIEW        2 SET KEYBOARD/USER
3 SET SYSTEM SALVOS     TIME DATE              RETURN MAIN   PARITY          3 KEYBOARD/CAMERA CTRL        3 SET PRIORITY
4 SET EVENT TIMERS      TITLE DISPLAY                        STOP BITS       4 MONITOR/CAMERA ACCESS         RETURN MAIN
5 SET ALARM CONTACTS    CAM TITLE LCK                        PORT USE        5 MONITOR/CONTACT ACCESS
6 MONITOR STATUS        MON TITLE LCK                        RETURN MAIN       RETURN MAIN
  RETURN MAIN           DISPLAY STATUS
                          RETURN MAIN
```

Menu Cursor Positioning/Paging

The following cursor instructions apply to all menus.

To position the cursor to a desired location on the menu:

- Use the joystick to move the cursor to the desired selection.
  or
- Press the NEXT button until the cursor is placed at the desired selection.
  or
- On the AD2078 keyboard, use the arrow direction keys (in the FOCUS and ZOOM sections of the keyboard) to move the cursor to the desired selection.

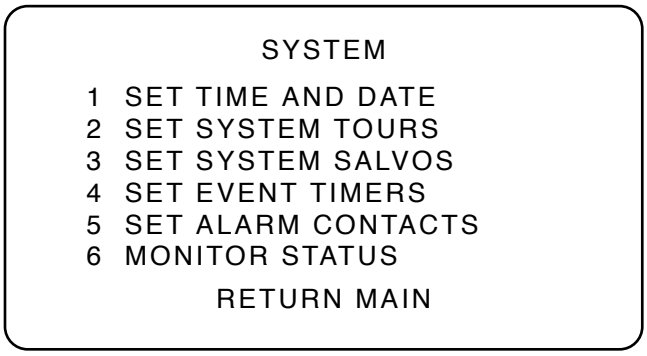
To change pages in a multi-page menu:

Using an **AD1678CM** keyboard:

- To move **vertically** through the pages (rows), press the CAMERA OFF or ARM button.
- To change directly to a page for a specific row/entry:
  1. Enter the desired row/entry number on the keypad.
  2. Press either the CAMERA OFF or ARM button.
- To move **horizontally** across the pages (columns), press the MONITOR OFF or ARM button.
- To change directly to a page for a specific column/heading:
  1. Enter the desired column/heading number on the keypad.
  2. Press either the MONITOR OFF or ARM button.

Using an **AD2078** keyboard:

- To move **vertically** through the pages (rows), press the PAGE up/down buttons in the IRIS section of the keyboard.
- To change directly to a page for a specific row/entry:
  1. Enter the desired row/entry number on the keypad.
  2. Press either PAGE up/down button.
- To move **horizontally** across the pages (columns), press the MONITOR OFF or ARM button.
- To change directly to a page for a specific column/heading:
  1. Enter the desired column/heading number on the keypad.
  2. Press either the MONITOR OFF or ARM button.



SYSTEM

The SYSTEM menu allows the user to define system Time and Date, to program System Tours, System Salvos, Event Timers, and Alarm Contacts, and to review the current Monitor Status of all system monitors.

To select an entry from the SYSTEM menu:

1. Move the cursor to the desired line.
   or
   Enter the number (1 - 6) for the desired line.
2. Press the ACK button to access that selection.

Each selection of the SYSTEM menu brings up another menu. Refer to the following pages for each menu.

SET TIME AND DATE	page 4-4
SET SYSTEM TOURS	page 4-5
SET SYSTEM SALVOS	page 4-8
SET EVENT TIMERS	page 4-10
SET ALARM CONTACTS	page 4-12
MONITOR STATUS	page 4-15

Move the cursor to the PREVIOUS MENU line of each of these menus and press the ACK key to return to the SYSTEM menu for further selections.

Move the cursor to the RETURN MAIN line of the SYSTEM menu and press the ACK key to return to the the Main Selection menu, page 4-2.

```
SYSTEM
1 SET TIME AND DATE
2 SET SYSTEM TOURS
3 SET SYSTEM SALVOS
4 SET EVENT TIMERS
5 SET ALARM CONTACTS
6 MONITOR STATUS
RETURN MAIN
```

SET TIME AND DATE

The SET TIME AND DATE menu permits setting the date format, date, time, and day of the week for on-screen displays.

```
SET TIME AND DATE

DATE FORMAT - MM-DD-YY
DATE - 09-20-94
TIME - 16:57:26
DAY OF WEEK - TUE

PREVIOUS MENU
```

DATE FORMAT - Selects the system date format for display. Note that the presentation of the date in the next menu line (DATE) changes to correspond to the format selection.

1. Place the cursor on the DATE FORMAT line.
2. Press the ACK key to cycle through each date format. Press the NEXT key to accept the displayed selection.
   or
   Enter the number which corresponds to the desired format and press the ACK key.

   1 - MM-DD-YY
   2 - DD-MM-YY
   3 - YY-MM-DD

DATE - Displays the date in the format selected (above).

1. Place the cursor on the DATE line.
2. Enter the first two digits of the date based on the format selected and press the ACK key.
3. Enter the second pair of digits based on the format selected and press the ACK key.
4. Enter the third pair of digits based on the format selected and press the ACK key.

Note: Pressing the ACK key without entering a number results in a "00" entry for that item.

Date Example: Using the MM-DD-YY format, enter the date 09-30-94.

Enter 09 on the keypad and press the ACK key.
Enter 30 on the keypad and press the ACK key.
Enter 94 on the keypad and press the ACK key.

TIME - Displays the time, in 24-hour format, as HH:MM:SS (hour:minute:second).

1. Place the cursor on the TIME line.
2. Enter the hour (HH) and press the ACK key.
   Note: Enter time in 24-hour format.
3. Enter the minutes (MM) and press the ACK key.
4. Enter the seconds (SS) and press the ACK key.

Time Example: Set the time to read 14:17:28.

Enter 14 on the keypad and press the ACK key.
Enter 17 on the keypad and press the ACK key.
Enter 28 on the keypad and press the ACK key.

DAY OF WEEK - Displays the day of the week, SUN - SAT. The day of the week must be set properly before programming Event Timers, page 4-10.

1. Place the cursor on the DAY OF WEEK line.
2. Press the ACK key to cycle through the days of the week. Press the NEXT key to accept the displayed selection.
   or
   Enter the number which corresponds to the desired day of the week and press the ACK key.

   1 - SUN
   2 - MON
   3 - TUE
   4 - WED
   5 - THR
   6 - FRI
   7 - SAT

PREVIOUS MENU returns to the SYSTEM menu, page 4-3.

See page 4-3 for cursor movement instructions.

```
SYSTEM

1  SET TIME AND DATE
2  SET SYSTEM TOURS
3  SET SYSTEM SALVOS
4  SET EVENT TIMERS
5  SET ALARM CONTACTS
6  MONITOR STATUS

RETURN MAIN
```

SET SYSTEM TOURS

A System Tour is a programmable sequence of cameras that can be called by a user to be displayed on the called monitor, or called by Event Timers to any monitor. The SET SYSTEM TOURS menu permits programming of 64 System tours. Each tour includes 64 entries. Each entry contains a camera number, dwell time, preset, auxiliary, and connect next.

The SET SYSTEM TOURS menu has eight pages, with eight entries per page. See page 4-3 for menu paging instructions.

```
SET SYSTEM TOURS
TOUR - 01
ENT   CAM   DWL   PRE   AUX     CN
01    001   02    01    1 ON    N
02    002   02    02    2 ON    N
03    003   02    03    3 ON    N
04    004   02    04    4 ON    N
05    005   02    05    1 OFF   N
06    006   02    06    2 OFF   N
07    007   02    07    3 OFF   N
08    008   02    08    0       N
PREVIOUS MENU
```

The tour being programmed is identified in the **TOUR** line below the menu title.

ENT (Entry) - Each of the 64 entries in a tour consists of a camera number, dwell time, preset number, auxiliary number, and a connect next designation (for salvos). Each tour entry is unique and the same camera (with different dwell times, presets, etc.) may be entered as many times as desired.

CAM (Camera) - A camera number is associated with each tour entry. If the CN field is an “S” or “T” the tour entry is associated with a System Salvo or another System Tour, that is, the CAM number is a System Salvo or System Tour number.

DWL (Dwell Time) - The dwell time is the length of time the camera is displayed on the monitor before switching to the next tour entry. The dwell time may be from 1 to 60 seconds; an entry of 61 will “HOLD” the current camera displayed.

PRE (Preset) - If the camera site is equipped for preset scenes (see page 3-3) a preset scene, from 1 to 72, may be specified for this tour entry. The preset scene specified is called automatically when the camera associated with this entry is called. If a preset is not desired, enter a zero in this field.

AUX (Auxiliary) - If the camera site is equipped with a Receiver that has Auxiliary relays, an auxiliary can be activated automatically by this tour entry. The number and type of auxiliary functions at a site depends on the options installed in the camera Receiver. If no auxiliary is desired, enter a zero in this field.

CN (Connect Next) - Connect Next selects the next camera entry of the tour for simultaneous callup to the next contiguous monitor, thereby forming a “Scratch Pad” Salvo call. This salvo calls up a set of cameras to contiguous monitors for the dwell time specified by the first camera entry.

A selection of No (“N”), Yes (“Y”), Salvo (“S”), or Tour (“T”) can be chosen for Connect Next.

- If “N” is selected, the Connect Next feature is not initiated. The next tour entry is selected for display after the specified dwell time.
- If “Y” is selected, the Connect Next feature calls the next tour entry to the next contiguous monitor; a Dwell Time cannot be programmed for the next entry.
- If “S” is selected, a pre-programmed System Salvo is called. The System Salvo number is specified in the CAM entry.
- If “T” is selected, another System Tour is called. The System Tour number is specified in the CAM entry. This selection links a number of tours together to form a larger camera sequence.

  Note: A tour cannot call itself.

The **PREVIOUS MENU** line returns to the SYSTEM menu, page 4-3.

PROGRAMMING A SYSTEM TOUR

To select a System Tour for programming:

1. Move the cursor to the TOUR number line of the menu.
2. Enter the desired tour number (from 1 to 64).
3. Press the ACK key.

See page 4-3 for cursor movement instructions.

CAM (Camera)

To add or change a camera in a tour:

1. Move the cursor to the CAM column and desired ENT line.
2. Enter the desired camera number (1 - 128 for Real camera numbers or 1 - 999 for Pseudo numbers). If the CN field is set to “S” or “T”, enter a System Salvo or Tour number.

Note: If Pseudo numbers are used, the CAM number switches between Pseudo numbers when N or Y is selected, and Real numbers when S or T is selected in the CN field.

3. Press the ACK key.

To eliminate a camera from a tour, set the dwell time (DWL) in the next column to zero (00) for the desired entry.

DWL (Dwell Time)

To set a dwell time for a camera in a tour:

1. Move the cursor to the DWL column and desired ENT line.
2. Enter the desired dwell time (from 1 to 60) in seconds.
   * If 61 is entered, the camera will Hold at this tour entry.
   * If 00 is entered, this entry is not called in the tour.
3. Press the ACK key.

CAM and DWL Example: Set tour entry 5 to call camera 100, for a dwell time of 5 seconds; set tour entry 6 to call System Salvo 24 for 20 seconds

SET SYSTEM TOURS
TOUR - 01

ENT	CAM	DWL	PRE	AUX	CN
01	001	02	00	0 -	N
02	002	02	00	0 -	N
03	003	02	00	0 -	N
04	004	02	00	0 -	N
05	**100**	**05**	00	0 -	N
06	**024**	**20**	00	0 -	**S**
07	007	02	00	0 -	N
08	008	02	00	0 -	N

PREVIOUS MENU

If preset scenes, auxiliary actions, or connect next actions are not required, repeat the preceding CAMERA and DWELL TIME instructions for as many tour entries as desired.

PRE (Preset)

If a camera preset scene is desired for a tour entry:

1. Move the cursor to the PRE column for the desired tour entry line.
2. Enter the desired preset number (from 1 to 72). Zero (0) represents no preset call for this entry. If the CN field is set to “S” or “T”, do not enter a preset number.
3. Press the ACK key.

AUX (Auxiliary)

If an auxiliary action is desired for a tour entry:

1. Move the cursor to the AUX column for the desired tour entry line.
2. Press the ACK key to cycle through the AUX options. Press the NEXT key to accept the displayed selection.

   or

   Enter one of the following numbers and press the ACK key. The selection is displayed in the AUX column.

   1 = 1 ON **5** = 1 OFF
   2 = 2 ON **6** = 2 OFF
   3 = 3 ON **7** = 3 OFF
   4 = 4 ON **8** = 0 - (no action)

   If the CN field is set to “S” or “T”, do not enter an auxiliary action selection.

PRE and AUX Examples: At tour entries 1 and 2, call preset scenes and activate auxiliaries 1 and 2; at tour entries 4 and 5 call preset scenes and turn off both auxiliaries.

SET SYSTEM TOURS
TOUR - 01

ENT	CAM	DWL	PRE	AUX	CN
01	001	02	**01**	**1 ON**	N
02	002	02	**02**	**2 ON**	N
03	003	02	00	0 -	N
04	004	02	**03**	**1 OFF**	N
05	100	05	**05**	**2 OFF**	N
06	024	20	00	0 -	S
07	007	02	00	0 -	N
08	008	02	00	0 -	N

PREVIOUS MENU

CN (Connect Next)

If a salvo or tour switching is desired at a tour entry:

1. Move the cursor to the CN column and desired entry line.
2. Press the ACK key to cycle through the CN selections. Press the NEXT key to accept the displayed selection.
   or
   Enter one of the following numbers and press the ACK key. The selection is displayed in the CN column entry.

   1 = N, no connect next
   2 = Y, connect to the next entry
   3 = S, call a System Salvo
   4 = T, call another System Tour

If No (**N**) is selected, the CAM number for this entry is called at this point of the tour sequence.

If Connect Next (**Y**) is selected, a camera salvo group is called at this entry of the tour sequence. All contiguous entries in the salvo group must be set to **Y**, except the last entry which is set to **N** or **S**. The dwell time for every entry of the group is controlled by the *first* entry of the group; the dwell time for all other entries in the salvo group may be left blank.

If System Salvo (**S**) is selected, the CAM number for this entry must be set to the desired System Salvo number. This System Salvo is called at this entry of the tour sequence.

If another System Tour (**T**) is selected, the CAM number for this entry must be set to the desired System Tour number to call. It is recommended that the *last* entry in a tour be used to call another tour (see CN Tour Linking Notes, next column). A System Tour cannot call itself.

Note: If Pseudo numbers are assigned, the Camera (CAM) field switches between Pseudo numbers when **N** or **Y** is selected, and Real numbers when **S** or **T** is selected.

CN Examples: Create a salvo group of entries 3, 4, and 5; at entry 8, link this tour to System Tour 11.

SET SYSTEM TOURS
TOUR - 01

ENT	CAM	DWL	PRE	AUX	CN
01	001	02	01	1 ON	N
02	002	02	02	2 ON	N
03	003	**10**	00	0 -	**Y**
04	004	**00**	03	1 OFF	**Y**
05	100	**00**	05	2 OFF	**N**
06	024	05	00	0 -	S
07	007	02	00	0 -	N
08	**011**	02	00	0 -	**T**

PREVIOUS MENU

RUNNING A SYSTEM TOUR

To call a System Tour from a keyboard:

1. Select (Call) the monitor to run a tour on.
2. Enter the System Tour number (1 - 64) on the keypad.
3. Press the keyboard RUN key.
4. Press the ACK key *within three seconds*.

The keyboard HOLD key, or a dwell time of 61, stops (Holds) the tour on the current camera. When a tour is on Hold, press the keyboard RUN key to continue the tour.

The keyboard NEXT key is used to set and change the running direction of a tour on Hold. To set the direction of the tour, enter one of the following key combinations:

1 - NEXT - Sets a tour in forward direction.

2 - NEXT - Sets a tour in reverse direction.

NEXT - Steps to the next camera of the tour and sets the tour to forward direction.

LAST (AD2078 keyboard) - Steps back to the prior camera of the tour and sets the tour to reverse.

When running a tour in the forward direction, an “F” is displayed in the on-screen Status Line beside the dwell time. Conversely, when running a tour in the reverse direction, an “R” is displayed on the screen.

Refer to page 2-5 for description of tour operating procedures.

To automatically run a System Tour based on time and day of the week, refer to the SET EVENT TIMERS menu, page 4-10.

CN TOUR LINKING NOTES:

* When a tour calls another System Tour, any tour entries defined following the CN entry of **T** (in the first tour) are not called up.
* When a tour calls another System Tour, the sequence does not automatically return to the original tour unless specified by a CN entry of **T** in the tour being called.
* When a tour is running in the reverse direction, tour linking may not operate as expected. The tour being called by a **T** CN link starts operating in reverse, at the *last* entry of that tour. Thus, if the tour being called also has a CN link to another System Tour, that link is executed *first*, and the rest of that tour is *not* run.

```
SYSTEM

1 SET TIME AND DATE
2 SET SYSTEM TOURS
3 SET SYSTEM SALVOS
4 SET EVENT TIMERS
5 SET ALARM CONTACTS
6 MONITOR STATUS

RETURN MAIN
```

SET SYSTEM SALVOS

A System Salvo is a group of cameras that can be called simultaneously to a contiguous group of monitors. A salvo can be called by keyboard commands, from a System Tour or another System Salvo, or on alarm receipt when included in an Alarm Contact setup. The SET SYSTEM SALVOS menu permits programming of 16 separate System Salvos. The maximum number of cameras in a System Salvo is eight. Note that System Salvos can be nested within other System Salvos.

The SET SYSTEM SALVOS menu has one page, with eight camera positions included in the page.

```
SET SYSTEM SALVOS
SALVO - 01
POS   CAM   PRE   AUX     CN
1     001   00    0 -     Y
2     002   02    2 ON    Y
3     003   03    3 ON    Y
4     004   04    4 ON    Y
5     005   70    3 ON    Y
6     006   00    0 -     Y
7     007   00    0 -     Y
8     008   72    1 OFF   N
PREVIOUS MENU
```

The salvo being programmed is identified by the **SALVO** line below the title line of the menu.

POS (Position) - The salvo position refers to the order of the cameras displayed on the contiguous monitors. Each position of the salvo identifies a camera with an optional preset scene and auxiliary action for this camera.

For Example: If a System Salvo containing six cameras is called to monitor 11, the first salvo camera is shown on monitor 11, the second camera on monitor 12, and so on, up to the last camera on monitor 16.

CAM (Camera) - A camera number is associated with each salvo position. This camera is displayed on the next contiguous monitor. If the CN field is "S", the CAM entry is associated with another System Salvo, and the Camera number is a System Salvo number (a nested Salvo).

PRE (Preset) - If the camera site is equipped for preset scenes a preset scene, from 1 to 72, may be specified for this salvo position. The preset scene specified is called automatically when the camera associated with this salvo position is called. If a preset is not desired, enter a zero in this field.

AUX (Auxiliary) - If the camera site is equipped with a Receiver that has Auxiliary relays, an auxiliary can be activated automatically during a salvo. The number and type of auxiliary functions at a site depends on the options installed in the camera Receiver. If no auxiliary action is desired, enter a zero in this field.

CN (Connect Next) - Connect Next selects the next camera in the table for simultaneous callup to the next contiguous monitor, thereby forming the salvo. A selection of Yes ("Y"), No ("N"), or Salvo ("S") can be chosen for Connect Next.

- If "Y" is selected, the next camera in the table is included in this salvo.
- If "N" is selected, the salvo stops at this camera entry.
- If "S" is selected, another System Salvo is called and this salvo stops at this entry.

The **PREVIOUS MENU** line of the SET SYSTEM SALVOS menu returns to the SYSTEM menu, page 4-3.

PROGRAMMING A SALVO

To select a System Salvo for programming:

1. Position cursor to the SALVO line in the menu.
2. Enter the desired salvo number (from 1 to 16).
3. Press the ACK key.

See page 4-3 for cursor movement instructions.

CAM (Camera)

To add or change a camera in a salvo:

1. Move the cursor to the CAM column and appropriate salvo position line.
2. Enter the desired camera number (1 - 128 for Real camera numbers or 1 - 999 for Pseudo numbers). If the CN field is set to "S", enter a System Salvo number (1 - 16).
3. Press the ACK key.

Note: To eliminate a camera from a salvo, press the ACK key without entering a number in the CAM field.

PRE (Preset)

If a preset scene is desired for the camera:

1. Move the cursor to the PRE column and desired camera position line.
2. Enter the preset number (1 - 72) to call for this camera. Zero represents no preset call for this entry. If the CN field is set to "S", do not enter a preset number.
3. Press the ACK key.

AUX (Auxiliary)

If an auxiliary action is desired for an entry:

1. Move the cursor to the AUX column and desired camera position line.
2. Press the ACK key to cycle through the AUX selections. Press the NEXT key to accept the displayed selection.
   or
   Enter one of the following numbers and press the ACK key. The auxiliary selection will appear in the AUX column.

1 = 1 ON	**5** = 1 OFF
2 = 2 ON	**6** = 2 OFF
3 = 3 ON	**7** = 3 OFF
4 = 4 ON	**8** = 0 - (no action)

   If the CN field is set to "S", do not enter an auxiliary action.

CN (Connect Next)

To include the next camera, or another System Salvo:

1. Move the cursor to the CN column for the desired position.
2. Press the ACK key to cycle through the CN selections. Press the NEXT key to accept the displayed selection.
   or
   Enter one of the following numbers and press the ACK key. The selection will display in the CN column entry.

   1 = N, no connect next
   2 = Y, connect to the next entry
   3 = S, call a System Salvo

All positions in a System Salvo should have the CN entry set to **Y** except the last entry, which is set to **N** or **S**.

On the first Salvo entry line, if an actual camera number matches the salvo number, only "Y" or "N" can be selected.

If a System Salvo is selected (**S**), the CAM number for this position must be set to the desired System Salvo number.

If Pseudo numbers are used, the CAM number switches between Pseudo numbers when **N** or **Y** is selected, and Real numbers when **S** is selected.

Example: For a five camera salvo, set position 5 to Camera number 17, Preset number 70, Auxiliary 3 ON, and CN to N indicating the last camera in System Salvo 01.

SET SYSTEM SALVOS
SALVO - **01**

POS	CAM	PRE	AUX	CN
01	001	00	0 -	**Y**
02	002	02	0 -	**Y**
03	003	03	0 -	**Y**
04	004	04	0 -	**Y**
05	**017**	**05**	**3 ON**	**N**
06	006	06	0 -	N
07	007	07	0 -	N
08	008	08	0 -	N

PREVIOUS MENU

CALLING A SYSTEM SALVO

To call a System Salvo from a keyboard:

1. Call the *first* monitor for the *first* camera in the salvo.
2. Enter the desired System Salvo number (1 - 16).
3. Press the SALVO key. The cameras, presets, and auxiliaries associated with that salvo will be displayed on the selected monitor, up to the *n*th contiguous monitor.

```
SYSTEM

1  SET TIME AND DATE
2  SET SYSTEM TOURS
3  SET SYSTEM SALVOS
4  SET EVENT TIMERS
5  SET ALARM CONTACTS
6  MONITOR STATUS

RETURN MAIN
```

SET EVENT TIMERS

Event Timers permits automatic callup of System Tours and/or Alarm Monitor Contact Tables. Each one of the automatic callups is referred to as an Event.

The EVENT TIMER menu is used to identify each Event and to program each Event for automatic callups. A maximum of 35 Events are available for programming. Each Event can be programmed for individual System Tour and Alarm Contact Table callups on different days of the week.

```
EVENT TIMER
07:11 DISABLED

EDIT TIMER
NEXT TIMER
CLEAR TIMER
ENABLE TIMER
CHANGE TIMER TO HH:MM

PREVIOUS MENU
```

An Event Timer ("Event") is created by entering a new time in the first line. If the Event is a new time the word "NEW" is displayed. If the Event already exists, either the word "ENABLED" or "DISABLED" is displayed.

To create a new Event Timer, or edit an existing Timer:

1. Move the cursor to the time location under the menu title.
2. Enter the hours (for example, 07) and press the ACK key.

   Note: Enter time in 24-hour format.

3. Enter the minutes (for example, 11) and press the ACK key.

   This moves the cursor to the EDIT TIMER line item in the EVENT TIMER menu.

Note: A maximum of 35 Event Timers can be programmed. If a time is entered for a 36th event, the message "EVENT TABLE FULL" is displayed. An existing Event Timer can be cleared to make room for a newly created table (see CLEAR TIMER menu command, page 4-11).

EDIT TIMER

Place the cursor on the EDIT TIMER line and press the ACK key to display the SET EVENT TIMERS menu. This menu is used to program the specified Event for System Tours and Alarm Contact Tables (ALM) callup. The SET EVENT TIMERS menu has four pages, with four monitors per page. Refer to page 4-3 for menu paging instructions.

```
SET EVENT TIMERS
TIME - 07:11
DAY OF WEEK
MON   S   M   T   W   T   F   S
001   01  02  03  04  05  06  07
002   00  00  00  00  00  00  00
003   00  00  00  00  00  00  00
004   00  00  00  00  00  00  00

ALM   0   1   0   0   0   0   0
PREVIOUS MENU
```

Note: The day of the week must be set properly for Events to occur as desired. See page 4-4 to set day of the week.

System Tour callup

Each entry in this table identifies a System Tour that is called at the specified Event time (TIME) for the indicated monitor (MON) on the indicated day of the week (S - S). The entries for a new Event Timer are defaulted to 00, no System Tours called to monitors.

To program a System Tour for callup by an Event Timer:

1. Move the cursor to the desired DAY OF WEEK and MON (monitor) position.
2. Enter the System Tour number (1 - 64) to call to this monitor at the indicated day and Event time.

   Note: Entering 00 is a "no-action" command while 65 is a "hold monitor at current camera" command.

3. Press the ACK key.

Alarm Monitor/Contact (ALM) callup

Separate Monitor/Contact Tables can be programmed to define which alarm contacts are armed for each monitor in the system (see page 4-27 for Monitor/Contact Table programming). The first table, Table 0, defines the current (active) system monitor/contact arming state. Monitor/Contact Tables 1 - 4 are pre-programmed tables that are called to the current Monitor/Contact Table by the Alarm Monitor/Contact (ALM) settings of the Set Event Timer menu.

Each entry in the ALM line identifies a Monitor/Contact Table that is called at the specified Event time (TIME) on the indicated day of the week (S - S). The table called up becomes the active system Monitor/Contact Table (Table 0), replacing the current monitor/contact arming state. The ALM entries for a new Event Timer are defaulted to zero, no Monitor/Contact Table callups.

To define Monitor/Contact Table callup by an Event Timer:

1. Move the cursor to the day of week in the ALM line.
2. Enter the Monitor/Contact Table number (0 - 4) desired for callup at the specified day and Event time.

   0 = no callup, use the current Monitor/Contact Table.
   1 = calls up the Monitor/Contact Table 1.
   2 = calls up the Monitor/Contact Table 2.
   3 = calls up the Monitor/Contact Table 3.
   4 = calls up the Monitor/Contact Table 4.

3. Press the ACK key.

Example: The following Event Timer is set for 7:11, to callup System Tours 01 through 06 to Monitor 001 on Sunday through Friday respectively, and to callup Monitor/Contact Table 1 on Monday and Table 2 on Saturday.

SET EVENT TIMERS
TIME - **07:11**
DAY OF WEEK

MON	S	M	T	W	T	F	S
001	**01**	**02**	**03**	**04**	**05**	**06**	00
002	00	00	00	00	00	00	00
003	00	00	00	00	00	00	00
004	00	00	00	00	00	00	00
ALM	**0**	**1**	**0**	**0**	**0**	**0**	**2**

PREVIOUS MENU

The **PREVIOUS MENU** line in the SET EVENT TIMERS menu returns to the EVENT TIMER menu, page 4-10.

NEXT TIMER

Place cursor on the NEXT TIMER line and press the ACK key to scroll through the programmed Event Timers.

Each programmed Event Timer shows the time of the event and its disabled/enabled state.

CLEAR TIMER

This command deletes the current Event Timer.

1. Place cursor on CLEAR TIMER line.
2. Press the ACK key. Time reverts back to 24:00 with an ILLEGAL TIME display.

ENABLE/DISABLE TIMER

Initially, the Event Timer is in a disabled state. You can either ENABLE or DISABLE the timer. The selected menu line in the EVENT TIMER menu is always opposite to the current state. The ACK key switches between the two states and toggles the menu line.

DISABLE TIMER

This command disables the Event Timer, but retains data.

1. Place cursor on the DISABLE TIMER line.
2. Press the ACK key. The Event Timer is now disabled and the menu line changes to ENABLE TIMER.

ENABLE TIMER

This command enables the Event Timer.

1. Place the cursor at the ENABLE TIMER line.
2. Press the ACK key. The Event Time is now enabled and the menu line changes to DISABLE TIMER.

CHANGE TIMER TO HH:MM

This command changes the time for the current Event Timer.

1. Place cursor on CHANGE TIMER TO HH:MM line.
2. Enter the correct hour.
3. Press the ACK key. The correct hour appears in the upper left-hand timer display.
4. Enter the correct minute.
5. Press the ACK key. The correct minute appears in the upper left-hand timer display.

PREVIOUS MENU - This command in the EVENT TIMER menu returns to the SYSTEM menu, page 4-3.

```
SYSTEM

1  SET TIME AND DATE
2  SET SYSTEM TOURS
3  SET SYSTEM SALVOS
4  SET EVENT TIMERS
5  SET ALARM CONTACTS
6  MONITOR STATUS

RETURN MAIN
```

SET ALARM CONTACTS

The SET ALARM CONTACT menu is used to associate cameras to contacts. A maximum of 512 entries are allowed. Each Alarm Contact Number (ACN) is associated with a camera number, a dwell time, and if desired a preset, an auxiliary, and a connect next item for salvo call on alarm.

The Set Alarm Contact menu has 64 pages, with eight ACNs per page. Refer to page 4-3 for menu paging instructions.

ALARM CONTACT SETUP

ACN	CAM	DWL	PRE	AUX	CN
001	001	02	00	0 -	N
002	002	02	00	0 -	N
003	003	02	00	0 -	N
004	004	02	00	0 -	N
005	005	02	00	0 -	N
006	006	02	00	0 -	N
007	007	02	00	0 -	N
008	008	02	00	0 -	N

PREVIOUS MENU

ACN (Alarm Contact Number) - Each of the 512 ACN entries is unique and consists of a camera number, dwell time, camera preset, auxiliary, alarm title, and connect next that are activated when this contact is received. Since each entry is unique, a camera may be entered for different ACN's as required with different dwell times, different presets, etc.

CAM (Camera) - This identifies the camera that is called to the monitor armed for this ACN (Monitor/Contact Access Menu, page 4-27) when the alarm contact is received. If the CN field is "S", the CAM entry is associated with System Salvos, and the Camera number entry is a System Salvo number.

DWL (Dwell Time) - Dwell Time sets the amount of dwell for the camera. The dwell time may be from 1 to 60 seconds in one second increments. An entry of 61 "HOLDs" the current camera displayed.

PRE (Preset) - If the camera is equipped with motorized pan/tilt and lens with feedback potentiometers, automatic preset scenes may be defined. If presets have been defined for the camera, the preset scene specified in this entry is called automatically when the camera is displayed on alarm receipt. If a preset is not desired, enter a zero.

AUX (Auxiliary) - If the camera site is equipped with a Receiver that has Auxiliary relays, an auxiliary can be activated automatically on alarm receipt. If no auxiliary action is desired, enter a zero in this field.

CN (Connect Next) - Connect Next selects the next camera in the table for simultaneous callup when the alarm contact is received. "N" (No), "Y" (Yes), "S" (Salvo), or "W" (Wired Set) can be selected for Connect Next.

- If "N" is selected, the Connect Next feature is not initiated. The next ACN entry in the table is used for an alarm contact.
- If "Y" is selected, the Connect Next feature calls the next table entry to the next contiguous monitor, for the dwell time specified by the first camera entry; the next ACN is no longer active and cannot be used for an alarm contact. (The last entry of a Y set must have an "N" or "S" CN entry.)
- If "S" is selected, a pre-programmed System Salvo is called. The System Salvo number is specified in the CAM entry.
- If "W" is selected, the Connect Next feature activates all ACN entries in a contiguous set when that alarm contact is received; each ACN entry in the contiguous set is still active for the associated alarm contact. (The last entry of a Wired set must have an "N" or "S" CN entry.)

  In addition, each CN selection in a contiguous Wired set may include an "*" symbol. This indicates that when the associated ACN is manual Acknowledged, all alarm contacts in that Wired set are cleared.

The **PREVIOUS MENU** line of the SET ALARM CONTACTS menu returns to the SYSTEM menu, page 4-3.

PROGRAMMING ALARM CONTACTS

Alarm Contact Numbers 1 to 128, 129 to 256, 257 to 384, and 385 to 512 are defaulted to cameras 1 through 128, respectively. Dwell Times are defaulted to two seconds.

To select an Alarm Contact for programming:

- Move the cursor to the desired Alarm Contact Number (ACN) line of the menu (from 1 to 512).

See page 4-3 for cursor movement and paging instructions.

CAM (Camera)

To associate a specific camera with an ACN:

1. Move the cursor to the CAM column and the appropriate ACN entry.
2. Enter the desired camera number (1 - 128 for Real camera numbers or 1 - 999 for Pseudo numbers). If the CN field is set to "S", enter a System Salvo number.

Note: If Pseudo numbers are used, the CAM number switches between Pseudo numbers when N, Y, or W is selected and Real numbers when S is selected for the CN field.

3. Press the ACK key.

DWL (Dwell Time)

To set a dwell time for the camera:

1. Move the cursor to the DWL column and the appropriate ACN entry.
2. Enter the desired dwell time (from 1 to 60) in seconds. If 61 is entered, the camera is set to a Hold at this tour entry.
3. Press the ACK key.

CAM and DWL Example: Set ACN007 to call camera 17 with a dwell time of 30 seconds.

ALARM CONTACT SETUP

ACN	CAM	DWL	PRE	AUX	CN
001	001	02	00	0 -	N
002	002	02	00	0 -	N
003	003	02	00	0 -	N
004	004	02	00	0 -	N
005	005	02	00	0 -	N
006	006	02	00	0 -	N
007	**017**	**30**	00	0 -	N
008	008	02	00	0 -	N

PREVIOUS MENU

If presets, aux, or salvo (CN) actions are not required, repeat the preceding CAMERA and DWELL TIME instructions.

PRE (Preset)

If a preset scene is desired for this camera:

1. Move the cursor to the PRE column and associated ACN.
2. Enter the desired preset number (from 1 to 72). Zero represents no preset call for this entry. If the CN field is set to "S", do not enter a preset number.
3. Press the ACK key.

AUX (Auxiliary)

If an auxiliary action is desired for an ACN entry:

1. Move the cursor to the AUX column and associated ACN.
2. Press the ACK key to cycle through the AUX selections. Press the NEXT key to accept the displayed selection.
   or
   Enter one of the following numbers and press the ACK key. The auxiliary selection will appear in the AUX column.

1 = 1 ON	**5** = 1 OFF
2 = 2 ON	**6** = 2 OFF
3 = 3 ON	**7** = 3 OFF
4 = 4 ON	**8** = 0 - (no action)

If the CN field is set to "S", do not enter an auxiliary action.

Example: Set preset 05 and AUX 1 ON for ACN 007.

ALARM CONTACT SETUP

ACN	CAM	DWL	PRE	AUX	CN
001	001	02	00	0 -	N
002	002	02	00	0 -	N
003	003	02	00	0 -	N
004	004	02	00	0 -	N
005	005	02	00	0 -	N
006	006	02	00	0 -	N
007	017	30	**05**	**1 ON**	N
008	008	02	00	0 -	N

PREVIOUS MENU

Note: Different ACN entries may be associated with the same camera, using different preset scenes and auxiliary actions. If more than one of these alarms is received during the same time period, the system will activate each preset and auxiliary for the same camera in the order that the alarms are received, stopping at the last received alarm contact. In this instance, the operator may not see the first preset or auxiliary action.

CN (Connect Next)

For salvo switching on alarm contact receipt:

1. Position the cursor to the desired CN column and ACN.
2. Press the ACK key to cycle through the CN selections. Press the NEXT key to accept the displayed selection.
   or
   Enter a number for one of the following selections and press the ACK key. (The second number of each selection adds the "*" feature to the CN selection, e.g., 8 = W*.)

   1, 5 = N, no connect next
   2, 6 = Y, connect the next entry in a salvo
   3, 7 = S, call a System Salvo
   4, 8 = W, activate all contiguous ACN entries

If No (**N**) is selected, the CAM number for this ACN entry is called on receipt of the alarm contact.

If Connect Next (**Y**) is selected, a camera salvo group is defined for callup by the *first* ACN of the group. All contiguous entries in a salvo group must be set to **Y**, except the last entry which is set to **N** or **S**. The dwell time for all entries of the salvo group is determined by the *first* entry of the group; the dwell time for all other entries in the salvo group may be left blank.

If System Salvo (**S**) is selected, the CAM number for this ACN entry must be set to the desired System Salvo number. This System Salvo is called on receipt of the alarm contact.

If Wired (**W**) is selected, *all* contiguous ACN entries in the Wired set are activated when *any* alarm contact of the set is received. Each ACN in the set is then handled as a separate, active alarm for the monitor it is armed to.

- All contiguous ACN entries in a Wired set must be set to **W**, except the last entry which is set to **N** or **S**. The last entry (**N** or **S**) is also activated as part of the Wired set. More than one Wired set may be specified in the ACN list; an alarm contact received in one Wired set does not activate any other alarm contacts in other Wired sets.
- The "*****" symbol is used in Wired set ACN entries *only.* When an ACN with a "*****" is manually Acknowledged, all alarm contacts in that Wired set are cleared. A manual Acknowledge for any ACN which does not include the "*****" will clear that ACN only. Any or all ACN entries in a Wired set may include this symbol in the CN field.

Note: If Pseudo numbers are used, the CAM number switches between Pseudo numbers when **N, Y,** or **W** is selected and Real numbers when **S** is selected.

Example: Define ACN 001 as the start of a 3 camera salvo, and ACNs 006 - 008 as a Wired set. Manual acknowledge of ACN 007 clears all three ACNs in this set.

ALARM CONTACT SETUP

ACN	CAM	DWL	PRE	AUX	CN
001	001	02	00	0 -	**Y**
002	002	**00**	00	0 -	**Y**
003	003	**00**	00	0 -	**N**
004	004	02	00	0 -	N
005	005	02	00	0 -	N
006	006	02	00	0 -	**W**
007	017	30	05	1 ON	**W***
008	008	02	00	0 -	**N**

PREVIOUS MENU

ALARM RESPONSE ACTION

When an alarm contact activation is received, the camera video associated with that alarm contact is displayed on the monitor that is armed and associated to that contact. In order to provide this automatic video callup, the cameras and monitors must be programmed and armed for alarm response. This includes associating alarm contacts to cameras and monitors, and arming each monitor.

Three steps are required to arm the system for alarm response:

1. Associate Alarm Contacts with Cameras:

   Each alarm contact (ACN) must be associated with a camera or camera salvo for automatic callup when that alarm is received. Refer to the Set Alarm Contacts menu, above, to associate ACNs to cameras.

2. Associate Alarm Contacts with Monitors:

   Each alarm contact (ACN) must be associated with a monitor or monitor block for callup when that alarm is received. Refer to the Monitor/Contact Access menu, page 4-27, to associate ACNs to monitors.

3. Arm the Monitors:

   Monitors must be armed using a Monitor Arming Code which identifies the alarm Display, Queuing, and Clearance methods for each monitor. Refer to the Monitor menu, page 4-16, to arm the monitors.

Refer to the Appendix, pages A-3 to A-7, for further description of Alarm Programming.

```
SYSTEM

1 SET TIME AND DATE
2 SET SYSTEM TOURS
3 SET SYSTEM SALVOS
4 SET EVENT TIMERS
5 SET ALARM CONTACTS
6 MONITOR STATUS

RETURN MAIN
```

MONITOR STATUS

The MONITOR STATUS display provides information about the 16 monitors connected to the system.

This display has two pages, with eight monitors per page. Refer to page 4-3 for menu paging instructions.

```
MONITOR STATUS

MON   CAM   STS   TOUR
01    024    R     02
02    001    H     --
03    032    A     --
04    001    R     05
05    001    S     --
06    006    H     --
07    007    H     --
08    001    H     --
ACK TO EXIT
```

Information regarding each monitor (**MON**) pertains to the:

CAM - Camera number currently displayed on the monitor

STS - Monitor status display codes indicate either:

H = Hold
R = Run
A = Alarm
S = Salvo

TOUR - Tour currently running on the monitor

Example: The following is an example of a Monitor Status display.

```
MONITOR STATUS

MON   CAM   STS   TOUR
01    024    R     02
02    001    H     --
03    032    A     --
04    001    R     05
05    001    S     --
06    006    H     --
07    007    H     --
08    001    H     --
ACK TO EXIT
```

The above example shows that:

- Monitor 1 is currently displaying camera 24, is in a Run status, and is running tour 02.
- Monitor 2 is currently displaying camera 01 and is in a Hold status.
- Monitor 3 is currently displaying camera 32 and is in an Alarm status.
- Monitor 4 is currently displaying camera 01, is in a Run status, and is running tour 05.
- Monitor 5 is currently displaying camera 01, which is part of a Salvo.

Press the ACK key to exit the MONITOR STATUS display and return to the SYSTEM menu.

```
MONITOR - 01
ARM TYPE -      ##      ACK -
TOUR  -  - -
DATE/TIME -
TITLE DISPLAY -
CAM TITLE  LCK -
MON TITLE  LCK -
DISPLAY STATUS -
RETURN MAIN
```

MONITOR

The MONITOR menu is used to review and change each monitor's setup programming.

To select a Monitor for review or programming:

1. Place the cursor on the MONITOR line.
2. Enter the monitor number (1 - 16) on the keypad.
3. Press the ACK key to move to the ARM TYPE field.

ARM TYPE - The Arm Type indicates the current alarm display, queuing, and removal method armed for this monitor. The available monitor Arm Types are listed in the table to the right. The default value for all monitors is DIS (Disarmed).

To set or change a monitor Arm Type:

1. Position the cursor to the ARM TYPE field.
2. Press the ACK key to cycle through the Arm Types until the desired Arm Type is shown, then press the NEXT key.
   or
   Enter the code number for the desired Arm Type (see table) and press the ACK key.

For arming codes 13 - 15, the second (Sequence) monitor is selected automatically (the next numeric system monitor) when the first (Hold) monitor is armed.

The cursor moves to the BLOCK number field (##) if a block arming code is selected (7 - 12), and a new block number (the next sequentially available block number, from 1 - 16) is displayed. If a non-block arming code is selected the BLOCK number defaults to a pound symbol (##) and the cursor moves to the ACK field.

Note: *ARM TYPE cannot be set or changed if any alarm contacts are active.*

Monitor Arming Codes

Code	Description	Arm Type
1	Sequence, Instant Clear	SSI
2	Sequence, Auto Clear (after 20 seconds)	SSA
3	Sequence, Manual Clear (ACK key)	SSM A*
4	Hold, Instant Clear	SHI
5	Hold, Auto Clear	SHA
6	Hold, Manual Clear	SHM A*
7	Block Sequence, Instant Clear	BSI
8	Block Sequence, Auto Clear	BSA
9	Block Sequence, Manual Clear	BSM A*
10	Block Hold, Instant Clear	BHI
11	Block Hold, Auto Clear	BHA
12	Block Hold, Manual Clear	BHM A*

		First Monitor Arm Type	Second Mon Arm Type
13	Hold and Sequence, Instant Clear	DHI	DSI
14	Hold and Sequence, Auto Clear	DHA	DSA
15	Hold and Sequence, Manual Clear	DHM A*	DSM A*
16	Disarmed		DIS

* Manual Clear/Acknowledge feature is always enabled.

The Manual Clear/Acknowledge feature can be enabled or disabled for any Instant Clear and Auto Clear arming code via the ACK entry of the Monitor menu (see next page). When enabled, the ACK key can also be used to clear alarms from this monitor (see Acknowledging Alarms, page 2-6).

The Monitor Arming Code can also be set for an individual monitor by keyboard commands, page 3-5.

See the Appendix, pages A-3 to A-7, for further definition of Alarm Programming and Monitor Arming Codes.

(Block number) - The block number field associates monitors together to form a monitor "block" for alarm callup. A monitor block may consist of any set of system monitors and need not be contiguous. When a block ARM TYPE is selected above, the cursor is moved to the Block number field and a default block number is automatically indicated.

To change or select a block number for this monitor:

1. Place the cursor on the block number (##).
2. Enter the desired block number (1 - 16) on the keypad.
3. Press the ACK key.

To set up a block of monitors:

1. Select each monitor via the MONITOR line.
2. Select a block ARM TYPE (e.g., BHI) for this monitor.
3. Select the block number for this monitor, as above.

To add monitors to the block, repeat for each monitor, using identical block numbers.

Note: The Alarm Clearance method for the block is set by the Arming Code for the *first* monitor of the block.

Refer to the Appendix, page A-5, for description of Alarm Programming with Monitor Blocks.

Example: Monitor 04 is associated to Block #07.

```
              MONITOR - 04
ARM TYPE - BHI    07     ACK -
TOUR  -  - -
DATE/TIME -
TITLE DISPLAY -
CAM TITLE LCK -
MON TITLE LCK -
DISPLAY STATUS -
            RETURN MAIN
```

ACK - The ACK entry enables or disables the Manual Clear feature for Instant and Auto Clear arming codes. This feature must be programmed *after* the monitor is armed with an Instant or Auto Clear ARM TYPE.

To set Manual Clear/Acknowledge for Instant or Auto:

1. Place the cursor on the ACK field.
2. Press the ACK key to toggle between YES or NO. Press the NEXT key to lock in the selection.

   YES (ACK Enabled) - When enabled, the letter "A" is displayed after the ARM TYPE (e.g., SSI A).

   NO (ACK Disabled) - When disabled, the letter "A" does not appear after the ARM TYPE.

Note: The ACK entry cannot be set to NO if a Manual Clear Arm Type code is programmed for the monitor.

TOUR - The TOUR entry indicates the System Tour (1 - 64) currently associated with this monitor; "--" indicates a Monitor Tour is associated with the monitor. Enter a System Tour number and press the ACK key to lock in the selection.

DATE/TIME - The DATE/TIME entry indicates if the date/time display is ON or OFF for this monitor's on-screen display. Press the ACK key to toggle the value between ON or OFF. Press the NEXT key to lock in the selection.

TITLE DISPLAY - The TITLE DISPLAY entry indicates if the title display is ON or OFF for this monitor's on-screen display. Press the ACK key to toggle the value between ON or OFF. Press the NEXT key to lock in the selection.

CAM TITLE LCK - The CAM TITLE LCK entry freezes the on-screen Camera Title display on this monitor. Press the ACK key to toggle between LOCKED or UNLOCKED. Press NEXT key to lock in the selection.

- UNLOCKED - Normal operation. Allows updating of the Camera Title display with each camera switch.
- LOCKED - Freezes the 16-character alphanumeric title that is on the monitor on-screen display.

Caution: *Once a title is locked it never changes on that monitor, even if the video is switched. The Camera number and Status switch, but the 16-character title does not.*

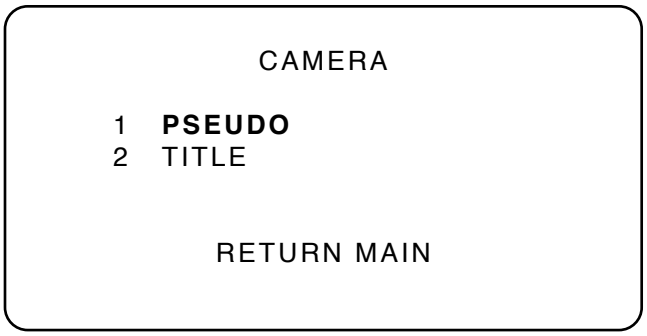
MON TITLE LCK - This entry freezes the on-screen Camera Number and Status display. Press the ACK key to sequence through LOCKED, UNLOCKED, or CAMERA STATUS. Press the NEXT key to lock in the selection.

- UNLOCKED - Normal operation. On-screen Camera Number and Status for that monitor updates at each event.
- LOCKED - Camera Number and Status currently displayed on the monitor is placed into a locked state.
- CAMERA STATUS - Camera Status for that monitor is placed into a locked state.

Note: To completely lock the monitor's on-screen display, place both Camera Title and Monitor Title into the LOCKED state.

DISPLAY STATUS - The DISPLAY STATUS entry indicates if the current tour sequencing status is HOLD or RUN. Press the ACK key to toggle the value between HOLD or RUN. Press the NEXT key to lock in the selection.

The **RETURN MAIN** line of the MONITOR menu returns to the the Main Selection menu, page 4-2.



CAMERA MENU

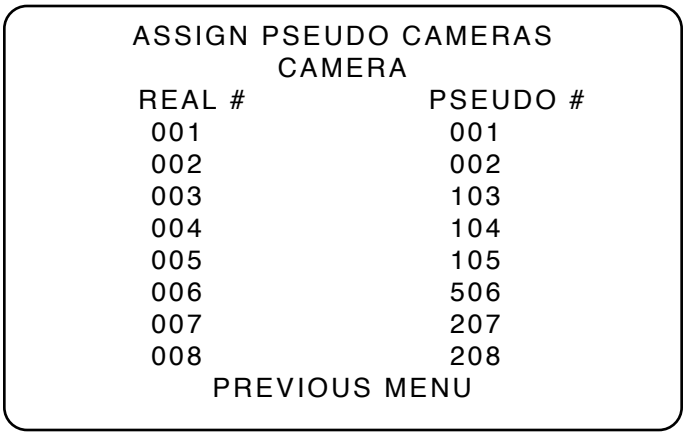
The CAMERA menu is used to re-assign camera numbers and to program camera titles. Each selection of the CAMERA menu calls up another menu, shown below and on page 4-19.

The **RETURN MAIN** line of the Camera menu returns to the the Main Selection menu, page 4-2.

PSEUDO

Use the PSEUDO menu to assign specific (Pseudo) camera numbers that are different from the actual camera number. The actual (Real) camera number is the number associated with the individual input BNC on the rear panel of each AD1650B Video Input Module.

This menu has multiple pages, with eight camera numbers per page. See page 4-3 for menu paging instructions.



The Pseudo camera numbers default to the Real video input BNC numbers, 1 - 128. The Pseudo numbers may be changed to any numerical value from one to 999. This allows groups of cameras to be associated by numerical value.

For example: A two-story building has ten cameras per floor.

Floor 1 cameras may be assigned numbers 100 through 110.
Floor 2 cameras may be assigned numbers 200 through 210.

To assign/change a Pseudo Camera Number:

1. Move the cursor to the REAL # line for the desired camera number to be changed.
2. Enter the new PSEUDO number (1 - 999) to be assigned to this REAL number.
3. Press the ACK key to assign this Pseudo number.

Note: Selecting a PSEUDO number that is already assigned to another real camera number results in a switch of the two numbers.

For example: If REAL # 001 is assigned PSEUDO # 025, then REAL # 025 is automatically reassigned to PSEUDO # 001.

Note: On a system reset (page 3-2) all PSEUDO numbers are reset to the REAL camera numbers.

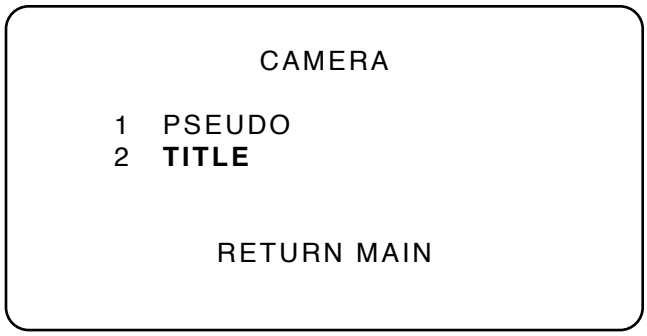
To locate a Pseudo number in the menu:

1. Enter the desired Real camera number on the keypad.
2. On an **AD1678CM** keyboard, press either the CAMERA OFF or ARM button.

   On an **AD2078** keyboard, press either PAGE up/down button in the IRIS section of the keyboard.

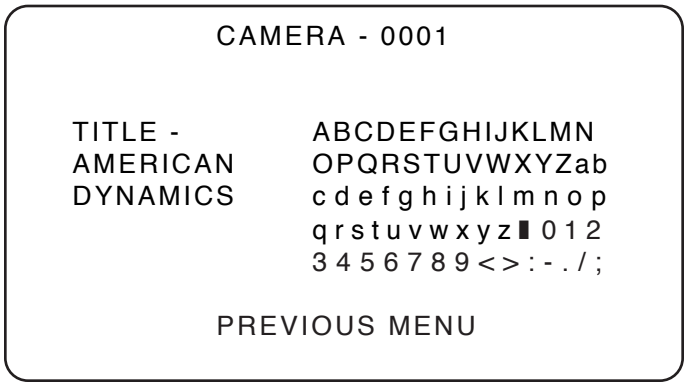
The Pseudo Camera menu then displays the page containing the desired Real number.

PREVIOUS MENU - Returns to the CAMERA menu.



TITLE

The Camera TITLE menu is used to program a 16-character alphanumeric title for each camera, for inclusion in the on-screen display.


CAMERA - 0001
TITLE -
AMERICAN
DYNAMICS
ABCDEFGHIJKLMN
OPQRSTUVWXYZab
c d e f g h i j k l m n o p
q r s t u v w x y z ▮ 0 1 2
3 4 5 6 7 8 9 < > : - . / ;
PREVIOUS MENU

To select a camera for programming:

1. Place the cursor at the CAMERA number line.
2. Press the ACK key to cycle through the available camera numbers until the desired number is shown, then press the NEXT key to move to the title lines.

   or

   To select a specific camera, enter the desired camera number on the keypad and press the ACK key to move the cursor to the title lines.

Note: Two cursors exist in the TITLE section of this menu. One cursor indicates position in the title; the other indicates the alphanumeric characters to be selected.

- Use the NEXT key to move the cursor within the title.
- Use the Joystick to move the cursor within the selectable letters, numbers, and symbols.

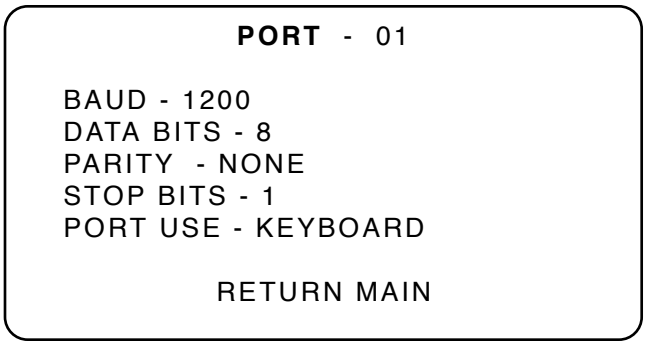
To enter or edit the camera title:

1. Use the NEXT key to place the cursor at the TITLE lines.
2. To edit an existing title, use the NEXT key to move the cursor within the title to the character to be changed.

Note: In order to change a character that has already been programmed, begin from the first entry and proceed through the text until the desired character location is reached. You cannot backspace through the title.

3. Use the joystick to move the alphanumerics cursor to the desired letter, number, or symbol.
4. Press the ACK key to acknowledge and place the selected character within the title.
5. Repeat steps 2, 3, and 4 using the joystick and the ACK key to “key-in” the desired title.

The **PREVIOUS MENU** line of the Camera TITLE menu returns to the CAMERA menu, page 4-18.



PORT

The PORT menu is used to configure baud rates, data bits, parity, stop bits, and port use for each of the four RS-232 ports on the rear of the AD1650B.

***Note**: Once the selections for a port have been made, do not change the settings (Baud, Parity, etc.) unless the connected devices are changed as well.*

To select a Port Number:

1. Place the cursor at the PORT line at the top of the menu.
2. Enter the desired port number (1 - 4) on the keypad.
3. Press the ACK key.

All fields in the menu are toggle fields; press the ACK key to cycle through the possible selections in each field.

BAUD - Selects the RS-232 baud rate for the port.

1. Place the cursor on the BAUD line of the menu.
2. Press the ACK key to cycle through the baud rates. Press the NEXT key to accept the displayed selection.
   or
   Enter the number which corresponds to the desired baud rate and press the ACK key to lock in the selection.

   1 = 300
   2 = 1200
   3 = 2400
   4 = 4800
   5 = 9600

DATA BITS - Selects the number of data bits.

1. Place the cursor on the DATA BITS line.
2. Press the ACK key to toggle the selections, 7 or 8. Press the NEXT key to accept the displayed selection.

PARITY - Selects the data parity.

1. Place the cursor on the PARITY line.
2. Press the ACK key to cycle through the parity selections. Press the NEXT key to accept the displayed selection.
   or
   Enter the number which corresponds to the desired parity and press the ACK key to lock in the selection.

   1 = NONE
   2 = ODD
   3 = EVEN

STOP BITS - Selects the number of stop bits.

1. Place the cursor on the STOP BITS line.
2. Press the ACK key to toggle the selections, 1 or 2. Press the NEXT key to accept the displayed selection.

PORT USE - Defines the use or type of device connected to the port. See page 4-21 for explanation of the Port Use types.

1. Place the cursor on the PORT USE line.
2. Press the ACK key to cycle through the port selections. Press the NEXT key to accept the displayed selection.
   or
   Enter the number which corresponds to the desired port use and press the ACK key to lock in the selection.

   1 = ALARM
   2 = KEYBOARD
   3 = TERMINAL
   4 = PRINTER
   5 = AUX

The **RETURN MAIN** line of the PORT menu returns to the the Main Selection menu, page 4-2.

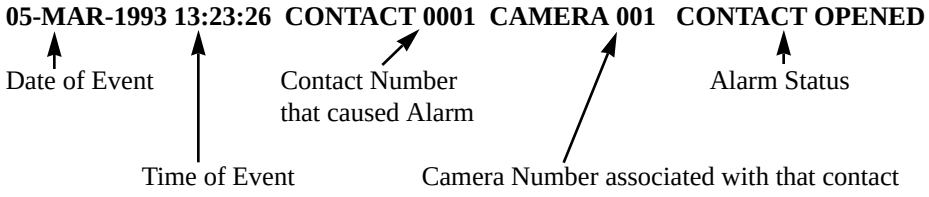
PORT USE Types

ALARM - Used for an Alarm Interface Unit connection for input of alarm codes to the AD1650B. Each alarm event message sent to this port generates an output message to a serial printer via the PRINTER port (see below).

KEYBOARD - Enables keyboard (or computer) control inputs to the port. In this case ensure that Data Bits is set to 8, Parity is set to NONE, and Stop Bits is set to 1. Ports defined for KEYBOARD use can be connected to an AD1981 Port Expander. When a Port Expander is used, the port baud rate must be set to 4800, and the keyboards set to 1200.

TERMINAL - Used to program, upload, and download information for AD1650B system from a PC. Select this option when using setup software package AD1650SW11B (4800 baud rate is recommended for consistent performance).

PRINTER - Outputs all alarmed events, both occurrence and removal, to a serial printer. The message format is as follows:


05-MAR-1993 13:23:26 CONTACT 0001 CAMERA 001 CONTACT OPENED
Date of Event
Contact Number that caused Alarm
Alarm Status
Time of Event
Camera Number associated with that contact

Alarm Status:
CONTACT OPENED - the alarm contact input has been removed/reset (Instant Clear)
TIMED OUT - the alarm was cleared by timeout (Auto Clear)
ACKNOWLEDGED FROM KEYBOARD *nn* - the alarm was cleared from keyboard *nn*
When the alarm first occurs, Alarm Status is blank

```
ACCESS

1. KEYBOARD/MONITOR
2. KEYBOARD/CAMERA VIEW
3. KEYBOARD/CAMERA CONTROL
4. MONITOR/CAMERA ACCESS
5. MONITOR/CONTACT ACCESS

RETURN MAIN
```

ACCESS

The ACCESS menus define system partitioning which controls operator keyboard access to monitors, cameras, pan/tilts, and alarms. System partitioning is used to segment the Matrix Switching System to the particular installation.

Keyboard numbering

Twenty-four keyboards may be used with the AD1650B: 16 connected to the four RS-232 ports and eight connected to the eight two-wire ports.

RS-232 Keyboards

Four RS-232 ports are provided on the rear of the AD1650B. These ports may be expanded, with AD1981 Port Expanders, to a maximum of 16 RS-232 keyboard ports.

For AD1650B systems with port expanders, each RS-232 port is assigned four keyboard numbers. The keyboard numbers, as displayed in the Keyboard Access menus, identify the RS-232 port (1-4) and the AD1981 connector port (a-d). These numbers are assigned as follows:

RS-232 Port	Keyboard numbers
1	1a, 1b, 1c, 1d
2	2a, 2b, 2c, 2d
3	3a, 3b, 3c, 3d
4	4a, 4b, 4c, 4d

If port expanders are not used, each RS-232 port uses only the lowest assigned keyboard number (1a for port 1, 2a for port 2, etc.). For proper keyboard numbering, verify if a port expander is used and to which port it is connected.

Two-Wire Keyboards

Eight ports on the rear of the AD1650B are provided for two-wire keyboards, and are separately numbered from 1 to 8 in the keyboard access menus.

Keyboard type selection

When either of the Keyboard/Camera menu entries (2 or 3) is selected from the main ACCESS menu above, the following menu is displayed first to select the type of keyboard.

```
KEYBOARD TYPE

1 RS-232
2 TWO-WIRE

PREVIOUS MENU
```

The type of keyboard determines the type of menu for the Keyboard/Camera access menus: Keyboard/Camera View and Keyboard/Camera Control. A separate menu is displayed for two-wire keyboards and for RS-232 keyboards in each of these functions. Both menus are illustrated in the applicable pages.

To select the keyboard type:

1. Position the cursor to the type of keyboard.
2. Press the ACK key. When the ACK key is pressed, the appropriate menu is displayed for the keyboard type and access menu selected, see page 4-24 or 4-25.

To exit the Keyboard Type menu without selecting a keyboard type, position the cursor to the **PREVIOUS MENU** line and press the ACK key. This returns to the main ACCESS menu.

All Access menus are displayed in multiple pages, both vertically and horizontally. See page 4-3 for cursor positioning and paging instructions.

The **RETURN MAIN** line of the ACCESS menu returns to the the Main Selection menu, page 4-2.

```
ACCESS

1. KEYBOARD/MONITOR
2. KEYBOARD/CAMERA VIEW
3. KEYBOARD/CAMERA CONTROL
4. MONITOR/CAMERA ACCESS
5. MONITOR/CONTACT ACCESS

RETURN MAIN
```

KEYBOARD/MONITOR

The KEYBOARD/MONITOR menu defines the Keyboard-to-Monitor access which prevents selected keyboards from *calling* selected monitors. The codes for each monitor entry in the menu displays are:

Y = keyboard has access privilege to monitor.
N = keyboard does not have access to monitor.

RS-232 Keyboards

For RS-232 keyboards, the following menu is displayed. This display has two pages, with eight monitors per page. Refer to page 4-3 for menu paging instructions. Refer to page 4-22 for keyboard numbering used in these menus.

```
KEYBOARD/MONITOR
RS-232  1        2        3        4
MON    a b c d  a b c d  a b c d  a b c d
01     Y Y Y Y  Y Y Y Y  Y Y Y Y  Y Y Y Y
02     N N N N  N Y Y Y  Y Y Y Y  Y Y Y Y
03     Y Y Y N  N N N N  N N N N  N N N N
04     Y Y Y Y  Y Y Y Y  Y Y Y Y  Y Y Y Y
05     Y Y Y Y  Y Y Y Y  Y Y Y Y  Y Y Y Y
06     Y Y Y Y  Y Y Y Y  Y Y Y Y  Y Y Y Y
07     Y Y Y Y  Y Y Y Y  Y Y Y Y  Y Y Y Y
08     Y Y Y Y  Y Y Y Y  Y Y Y Y  Y Y Y Y
PREVIOUS MENU
```

The above example menu indicates that:

- All keyboards can call (Y) monitor 1.
- Keyboards 1a, 1b, 1c, 1d, and 2a cannot call (N) monitor 2.
- Only keyboards 1a, 1b, and 1c can call (Y) monitor 3.

The Keyboard/Monitor menu entries are set default to Y, all keyboards have access privilege to all monitors.

To change the access to a monitor from any RS-232 keyboard:

1. Position the cursor to the monitor and keyboard location that is to be changed.
2. Press the ACK key. Each time the ACK key is pressed the menu setting toggles between:

   Y = this keyboard can call this monitor.
   N = no access to this monitor from this keyboard.
3. Repeat steps 1 and 2 for any additional changes desired.

Position the cursor at the **PREVIOUS MENU** line and press the ACK key to return to the main ACCESS Menu, page 4-22.

Port Expander Notes: If a port expander is used, configure columns "a", "b", "c", and "d" for each keyboard attached to the corresponding RS-232 port (1-4). If a port expander is *not* used, configure only column "a" for that port.

Two-Wire Keyboards

For two-wire keyboards, no menu is provided. Keyboard access to the system monitors is controlled by the keyboard ports on the rear panel of the AD1650B. Eight two-wire keyboard ports are provided. The port number on the rear panel, labeled 1 - 8, corresponds to the monitor number controlled via that port. Two types of keyboards are available for connection to these ports:

AD1672A - a two-monitor keyboard. This keyboard has two connection cables and may be connected to any two of the ports to control the corresponding numbered monitors.

AD1678C - a system keyboard. It may be connected to *any* 2-wire port to control eight monitors, 1 - 8.

```
ACCESS

1. KEYBOARD/MONITOR
2. KEYBOARD/CAMERA VIEW
3. KEYBOARD/CAMERA CONTROL
4. MONITOR/CAMERA ACCESS
5. MONITOR/CONTACT ACCESS

RETURN MAIN
```

KEYBOARD/CAMERA VIEW

This menu defines the Keyboard-to-Camera viewing access, which prevents selected keyboards from calling up selected cameras for *viewing* on any monitor. In this menu it is the keyboard which controls what can be viewed on a monitor.

Note: Cameras that do not have viewing access from a keyboard should not be placed in a System Tour.

Two-Wire Keyboards

For the two-wire keyboards, the following menu is displayed. This display has 16 pages, with eight cameras per page. Refer to page 4-3 for menu paging instructions.

KEYBOARD/CAMERA VIEW
TWO-WIRE

CAM	1	2	3	4	5	6	7	8
001	Y	Y	Y	Y	Y	Y	Y	Y
002	N	N	N	Y	Y	Y	Y	Y
003	Y	Y	Y	N	N	N	N	N
004	Y	Y	Y	Y	Y	Y	Y	Y
005	Y	Y	Y	Y	Y	Y	Y	Y
006	Y	Y	Y	Y	Y	Y	Y	Y
007	Y	Y	Y	Y	Y	Y	Y	Y
008	Y	Y	Y	Y	Y	Y	Y	Y

PREVIOUS MENU

The example chart indicates that:

- All keyboards can call (Y) camera 1.
- Keyboards 1, 2, and 3 cannot call (N) camera 2.
- Only keyboards 1, 2, and 3 can call (Y) camera 3.

To change the access to a selected camera from a keyboard:

1. Position the cursor to the camera and keyboard entry.
2. Press the ACK key. When the ACK key is pressed the setting toggles between: **Y** = call access from this keyboard, **N** = no call access at the cursor location.
3. Repeat steps 1 and 2 for any additional changes desired.

Position the cursor at the **PREVIOUS MENU** line and press the ACK key to return to the main ACCESS Menu, page 4-22.

RS-232 Keyboards

For the RS-232 keyboards, the following menu is displayed. This display has 16 pages, with eight cameras per page. Refer to page 4-3 for menu paging instructions. Refer to page 4-22 for keyboard numbering.

KEYBOARD/CAMERA VIEW

RS-232	1	2	3	4
CAM	a b c d	a b c d	a b c d	a b c d
001	Y Y Y Y	Y Y Y Y	Y Y Y Y	Y Y Y Y
002	N N N N	N Y Y Y	Y Y Y Y	Y Y Y Y
003	Y Y Y N	N N N N	N N N N	N N N N
004	Y Y Y Y	Y Y Y Y	Y Y Y Y	Y Y Y Y
005	Y Y Y Y	Y Y Y Y	Y Y Y Y	Y Y Y Y
006	Y Y Y Y	Y Y Y Y	Y Y Y Y	Y Y Y Y
007	Y Y Y Y	Y Y Y Y	Y Y Y Y	Y Y Y Y
008	Y Y Y Y	Y Y Y Y	Y Y Y Y	Y Y Y Y

PREVIOUS MENU

The above example menu indicates that:

- All keyboards can call (Y) camera 1.
- Keyboards 1a, 1b, 1c, 1d, and 2a cannot call (N) camera 2.
- Only keyboards 1a, 1b, and 1c can call (Y) camera 3.

To change the access to a selected camera from a keyboard:

1. Position the cursor to the camera and keyboard entry.
2. Press the ACK key. When the ACK button is pressed, the setting toggles between: **Y** = call access from this keyboard, **N** = no call access at the cursor location.
3. Repeat steps 1 and 2 for any additional changes desired.

Position the cursor at the **PREVIOUS MENU** line and press the ACK key to return to the main ACCESS Menu, page 4-22.

Port Expander Notes: If a port expander is used, configure columns "a", "b", "c", and "d" for each keyboard attached to the corresponding RS-232 port (1-4). If a port expander is *not* used, configure only column "a" for that port.

```
ACCESS

1. KEYBOARD/MONITOR
2. KEYBOARD/CAMERA VIEW
3. KEYBOARD/CAMERA CONTROL
4. MONITOR/CAMERA ACCESS
5. MONITOR/CONTACT ACCESS

RETURN MAIN
```

KEYBOARD/CAMERA CONTROL

This menu defines the Keyboard-to-Camera control access which prevents selected keyboards from *controlling* remote functions on selected cameras. This feature only prevents control, it does not prevent camera viewing. (Any camera that is locked from a keyboard would also be, by default, locked from that keyboard for control.)

Two-Wire Keyboards

For the two-wire keyboards, the following menu is displayed. This display has 16 pages, with eight cameras per page. Refer to page 4-3 for menu paging instructions.

```
KEYBOARD/CAMERA CTRL
TWO-WIRE
CAM   1  2  3  4  5  6  7  8
001   Y  Y  Y  Y  Y  Y  Y  Y
002   N  N  N  Y  Y  Y  Y  Y
003   Y  Y  Y  N  N  N  N  N
004   Y  Y  Y  Y  Y  Y  Y  Y
005   Y  Y  Y  Y  Y  Y  Y  Y
006   Y  Y  Y  Y  Y  Y  Y  Y
007   Y  Y  Y  Y  Y  Y  Y  Y
008   Y  Y  Y  Y  Y  Y  Y  Y
PREVIOUS MENU
```

The above example menu indicates that:

- All the keyboards can control (Y) camera 1.
- Keyboards 1, 2, and 3 cannot control (N) camera 2.
- Only keyboards 1, 2, and 3 can control (Y) camera 3.

To change the control access of cameras from a keyboard:

1. Position the cursor to the camera and keyboard entry.
2. Press the ACK key. When the ACK key is pressed the setting toggles between: **Y** = control access from this keyboard, **N** = no control access at the cursor location.
3. Repeat steps 1 and 2 for any additional changes desired.

Position the cursor at the **PREVIOUS MENU** line and press the ACK key to return to the main ACCESS Menu, page 4-22.

RS-232 Keyboards

For the RS-232 keyboards, the following menu is displayed. This display has 16 pages, with eight cameras per page. Refer to page 4-3 for menu paging instructions. Refer to page 4-22 for keyboard numbering.

```
KEYBOARD/CAMERA CTRL
RS-232  1       2       3       4
CAM   a b c d   a b c d   a b c d   a b c d
001   Y Y Y Y   Y Y Y Y   Y Y Y Y   Y Y Y Y
002   N N N N   N Y Y Y   Y Y Y Y   Y Y Y Y
003   Y Y Y N   N N N N   N N N N   N N N N
004   Y Y Y Y   Y Y Y Y   Y Y Y Y   Y Y Y Y
005   Y Y Y Y   Y Y Y Y   Y Y Y Y   Y Y Y Y
006   Y Y Y Y   Y Y Y Y   Y Y Y Y   Y Y Y Y
007   Y Y Y Y   Y Y Y Y   Y Y Y Y   Y Y Y Y
008   Y Y Y Y   Y Y Y Y   Y Y Y Y   Y Y Y Y
PREVIOUS MENU
```

The above example menu indicates that:

- All keyboards can control (Y) camera 1.
- Keyboards 1a, 1b, 1c, 1d, and 2a cannot control (N) camera 2.
- Only keyboards 1a, 1b, and 1c can control (Y) camera 3.

To change the control access of cameras from a keyboard:

1. Position the cursor to the camera and keyboard entry.
2. Press the ACK key. When the ACK button is pressed, the setting toggles between: **Y** = control access from this keyboard, **N** = no control access at the cursor location.
3. Repeat steps 1 and 2 for any additional changes desired.

Position the cursor at the **PREVIOUS MENU** line and press the ACK key to return to the main ACCESS Menu, page 4-22.

Port Expander Notes: If a port expander is used, configure columns "a", "b", "c", and "d" for each keyboard attached to the corresponding RS-232 port (1-4). If a port expander is *not* used, configure only column "a" for that port.

```
ACCESS

1. KEYBOARD/MONITOR
2. KEYBOARD/CAMERA VIEW
3. KEYBOARD/CAMERA CONTROL
4. MONITOR/CAMERA ACCESS
5. MONITOR/CONTACT ACCESS

RETURN MAIN
```

MONITOR/CAMERA ACCESS

This menu defines the Monitor/Camera access which prevents selected monitors from viewing selected cameras.

In this menu it is the *monitor* which controls what can be seen on itself. If access is denied, that camera can not be called to that monitor from a keyboard.

The MONITOR/CAMERA ACCESS menu, below, has multiple pages with eight cameras per page shown vertically and four monitors per page horizontally. Refer to page 4-3 for menu paging instructions.

```
MONITOR/CAMERA ACCESS
        MONITOR
CAM   01   02   03   04
001    Y    Y    Y    Y
002    N    N    N    Y
003    Y    Y    Y    N
004    Y    Y    Y    Y
005    Y    Y    Y    Y
006    Y    Y    Y    Y
007    Y    Y    Y    Y
008    Y    Y    Y    Y
      PREVIOUS MENU
```

The above example menu indicates that:

- All the monitors have viewing access for camera 1.
- Monitors 1, 2, and 3 can not view what is on camera 2.
- Only monitors 1, 2, and 3 can view what is on camera 3.

The Monitor/Camera Access menu entries are set default to Y, all monitors have access privilege to view all cameras.

<u>To change the view access for selected cameras on a monitor:</u>

1. Position the cursor to the camera and monitor location that is to be changed.
2. Press the ACK key. Each time the ACK key is pressed the setting toggles between:

   Y = this camera can be viewed on this monitor.
   N = no viewing of this camera at this monitor.
3. Repeat steps 1 and 2 for any additional changes desired.

Position the cursor at the **PREVIOUS MENU** line and press the ACK key to return to the main ACCESS Menu, page 4-22.

Note: If the keyboard calls a System Tour to a monitor that contains a camera that is intended to be “locked out”, it will not be viewed during the System Tour.

```
ACCESS

1. KEYBOARD/MONITOR
2. KEYBOARD/CAMERA VIEW
3. KEYBOARD/CAMERA CONTROL
4. MONITOR/CAMERA ACCESS
5. MONITOR/CONTACT ACCESS

RETURN MAIN
```

MONITOR/CONTACT ACCESS

The MONITOR/CONTACT ACCESS menu defines which alarm contacts are associated to each monitor in the system. Five Monitor/Contact Tables can be programmed by this menu, providing different Monitor/Contact associations. The first table, Table 0, is the current (active) system Monitor/Contact arming status. Monitor/Contact Tables 1 - 4 are stored tables that can be written into (called to) the current Monitor/Contact arming table by Event Timers only (page 4-10).

The Monitor Contact Table menu has multiple pages with eight ACN's per page vertically, and four monitors per page horizontally. Refer to page 4-3 for menu paging instructions.

```
MON CONTACT TABLE - 1
        MONITOR
ACN     05    06    07    08
001     N     N     N     N
002     N     N     N     N
003     N     N     Y     N
004     N     N     N     Y
005     N     N     N     N
006     Y     N     N     N
007     N     N     N     N
008     N     N     N     N
      PREVIOUS MENU
```

The title line of the Monitor/Contact Table menu indicates the table which is being programmed. If this line displays two dashes (- -), the current (active) table is being programmed; if a number (1 to 4) is displayed, the corresponding stored Monitor/Contact table is being programmed.

The above example indicates that Monitor Contact table 1:

- Alarm Contact 003 will activate monitor 7's Arm Type
- Alarm Contact 004 will activate monitor 8's Arm Type
- Alarm Contact 006 will activate monitor 5's Arm Type

See the Appendix, pages A-3 to A-7, for further description of Alarm Contact Arming.

The Monitor/Contact Tables are set default to N, no contacts are associated with any monitors.

To select a Monitor/Contact Table for programming:

1. Place the cursor on the MON CONTACT TABLE title line.
2. Enter the table number, 1-4, on the keypad. If no number is entered, the current active table is selected.
3. Press the ACK key.

To change the alarm contact association of the selected table:

1. Position the cursor to the alarm contact (ACN) and monitor entry to be changed.
2. Press the ACK key. Each time the ACK key is pressed the setting toggles between: **Y** = ACN is associated to this monitor, **N** = ACN is not associated.
3. Repeat steps 1 and 2 for any additional changes desired.

Note: ***DO NOT*** *mix monitor salvos in alarm contact arming. Monitors used for salvo alarms should not be programmed for individual alarm contacts.*

* **Monitors associated to individual alarm contacts** should *not* be included in salvos that are armed to alarm contacts (via either the Connect Next or Salvo selections in the Set Alarm Contacts menu, page 4-12). Such monitors may be armed to one or more other individual alarm contacts *only.*

* **Monitors included in salvos armed to alarm contacts** (via the Set Alarm Contacts menu, page 4-12) should *not* be armed to individual alarm contacts. Such monitors may be included in other salvos armed for alarm contacts, as long as all salvos are of equal length (i.e., the same number of monitors in the salvos).

Note: *When arming alarm contacts to a monitor block, arm the contacts to the first monitor of the block only.* ***DO NOT*** *arm any contacts to the remaining monitors of a block.*

Position the cursor at the **PREVIOUS MENU** line and press the ACK key to return to the main ACCESS Menu, page 4-22.

```
PRIORITY

1 USER IDENTIFICATION
2 SET KEYBOARD/USER
3 SET PRIORITY

RETURN MAIN
```

PRIORITY MENU

The PRIORITY menu is used to:

- Enable (or disable) user identification passcode entry into the system,
- Configure each of the eight priority levels,
- Set priority levels for keyboards or users,
- Set user passcodes.

Note: If USER IDS is enabled by the User Identification menu, the #2 entry in the PRIORITY Menu indicates "SET USER" (page 4-29, first column).

If USER IDS is disabled by the User Identification menu, the #2 entry in the PRIORITY Menu indicates "SET KEYBOARD" (page 4-29, second column).

The **RETURN MAIN** line of the PRIORITY menu returns to the the Main Selection menu, page 4-2.

USER IDENTIFICATION

The USER IDENTIFICATION menu, below, is used to enable or disable the system passcode entry procedure.

```
USER IDENTIFICATION

USER IDS ENABLED?  N

PREVIOUS MENU
```

The system passcode entry procedure allows only authorized personnel to operate the system. The setting for USER IDS ENABLED does not take effect until the user exits the menu programming mode.

To enable or disable USER IDS (keyboard passcode entry):

1. Move the cursor to the USER IDS ENABLED line of the menu.
2. Press the ACK key to toggle the settings:
   N for no keyboard passcode entry.
   Y for keyboard passcode entry enabled.

PREVIOUS MENU - Returns to the PRIORITY menu.

SYSTEM PASSCODE ENTRY

Passcode entry is used as a security procedure to allow only authorized personnel to operate the system. To enable the passcode security feature, set USER IDS ENABLE to "Y" in the USER IDENTIFICATION menu, above.

When USER IDS is enabled, the user must have a user number and a passcode to access the system through an AD1678CM or AD2078 keyboard. See User Passcode Entry, page 1-3, for the logon and logoff procedures when USER IDS is enabled.

```
PRIORITY

1 USER IDENTIFICATION
2 SET USER
3 SET PRIORITY

RETURN MAIN
```

SET USER

If USER IDs is enabled, the SET USER menu is used to set a priority level and passcode for each of 48 users. Each priority level is defined through the SET PRIORITY menu, page 4-30.

```
SET USER

USER # -      01
PRIORITY LEVEL: 8
PASSCODE
XXXXXX

PREVIOUS MENU
```

Define the User to be selected:

1. Place the cursor at the USER line.
2. Enter the user number (1 - 48) to be defined.
3. Press the ACK key to accept the user number and move to the next menu line, PRIORITY LEVEL.

To set a user priority:

1. Enter a priority number from 1 (lowest priority) to 8 (highest priority). A user with higher priority can capture control of cameras from users with lower priority levels.
2. Press the ACK key to accept the priority level and move to the next menu line, PASSCODE.

To set a passcode:

1. Enter a maximum of six digits at the keyboard.
2. Press the ACK key. The system then prompts to verify the passcode by displaying "VERIFY PASSCODE".
3. Re-enter the same six-digit code.
4. Press the ACK key.
5. If the verification code is not the same as the original one entered, the following error message is displayed on the menu: **ERROR - REENTER PASSCODE**. Go back and repeat steps 1 through 4.
6. If the verification code does verify, the cursor is placed at the PREVIOUS MENU line.

PREVIOUS MENU - Returns to the PRIORITY menu.

```
PRIORITY

1 USER IDENTIFICATION
2 SET KEYBOARD
3 SET PRIORITY

RETURN MAIN
```

SET KEYBOARD

If USER IDs is disabled, the SET KEYBOARD menu is used to set a priority level for each of the 16 RS-232 keyboards. Each priority level is defined through the SET PRIORITY menu, page 4-30.

```
SET KEYBOARD

KEYBOARD -  01
PRIORITY LEVEL: 8

PREVIOUS MENU
```

Select the keyboard to be setup:

1. Place the cursor at the KEYBOARD line.
2. Press the ACK key to cycle through the list of available keyboard numbers (1a, 1b, 1c, etc., through 4d), until the desired keyboard number is shown. Press the NEXT key to accept the displayed selection.

   or

   Enter the number which corresponds to the desired keyboard and press the ACK key. These numbers are:

Enter number	for Keyboard numbers
1 thru 4	1a thru 1d
5 thru 8	2a thru 2d
7 thru 12	3a thru 3d
13 thru 16	4a thru 4d

To set a keyboard priority:

1. Enter a number from 1 (lowest priority) to 8 (highest priority). A keyboard of higher priority can capture control of cameras from keyboards with lower priority levels.
2. Press the ACK key to lock in the priority level and move to the PREVIOUS MENU line.

Note: All keyboards default to level "8" priority.

PREVIOUS MENU - Returns to the PRIORITY menu.

```
PRIORITY

1 USER IDENTIFICATION
2 SET USER
3 SET PRIORITY

RETURN MAIN
```

SET PRIORITY

The SET PRIORITY menu is used to define the configuration for each of the eight priority levels. All levels default to the same configuration. Each priority level can be configured as desired. Once the levels have been defined, the desired priority level may be applied to individual users and/or keyboards.

```
SET PRIORITY

LEVEL
ADD USER
SYSTEM RESET
LOCK CAM ABILITY
UTILIZE V/C ACCESS
MENU ACCESS
CHANGE PARAMETERS

PREVIOUS MENU
```

Each level consists of the following user function definitions: Add User, System Reset, Lock Cam Ability, Override View/Control, Menu Access, and Change Parameters. Each function is either enabled (Y) or disabled (N).

LEVEL - Selects one of eight priority levels to define.

To configure a Priority Level:

1. Move the cursor to the LEVEL line.
2. Select a priority level number (1 - 8).
3. Press the ACK key to set this priority level and move to the next menu line item.

See page 4-3 for cursor positioning instructions, to move to a selected menu line item within each level.

Press the ACK key to toggle between ENABLED (Y) or DISABLED (N) in each menu line.

ADD USER - If enabled, it allows a new user to be added. The USER IDs must be enabled, see page 4-28. Also, see Set User Menu, page 4-29.

SYSTEM RESET - If enabled, the selected priority level can reset the system by keyboard commands. See System Reset, page 3-2 for these keyboard commands.

LOCK CAM ABILITY - If enabled, the selected priority level can lock the control of a camera by keyboard commands. See Camera Lockout, page 3-3 for these keyboard commands.

UTILIZE/OVERRIDE VIEW CONTROL - The following two menu functions toggle between each other.

UTILIZE V/C ACCESS - If enabled, the system uses the access tables for system partitioning and the selected priority level cannot override the access tables. If disabled, the menu line displays “OVERRIDE VIEW CONTROL”.

OVERRIDE VIEW CONTROL - If enabled, the selected priority level can override the Keyboard/Camera View and Control Access Tables access restrictions. If disabled, the menu line displays “UTILIZE V/C ACCESS”.

MENU ACCESS - If enabled, the selected priority level has access to the programming menus through the keyboard. This function must be enabled to enable Change Parameters, below.

CHANGE PARAMETERS - If enabled, the selected priority level can change system data through the menus. If Menu Access (above) is disabled for this priority level, Change Parameters is disabled and cannot be enabled.

PREVIOUS MENU - Returns to the PRIORITY menu, page 4-28.

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AD1650B SYSTEM DEFAULTS

The following are the factory default values; these are set from the System Reset function, page 1-3 or 3-2.

Keyboard Control

All Monitors switch to Camera 1; all Keyboards have no Monitors under their control

Non-Menu Programming

DATE FORMAT:	MM-DD-YY
MONITOR DISPLAY ARRANGEMENT:	All Titles, Date, and Time displayed, on bottom of screen
CAMERA LOCKOUT:	All Cameras UNLOCKED
MONITOR TOUR:	Monitor Tour erased for all Monitors
MONITOR ARMING:	All monitors set to DIS, Disarmed
AUDIO ALARM:	Audio is enabled system wide

Menu Programming

TIME AND DATE:	Set to the Time and Date of the embedded system software
SYSTEM TOURS:	All cleared to: CAM = none DWL, PRE, AUX = 0 CN = N
SYSTEM SALVOS:	All cleared to: CAM = none PRE, AUX = 0 CN = N
EVENT TIMERS:	All Timers cleared to 24:00, all table entries set to 0, no callups
ALARM CONTACTS:	ACNs 1 to 128, 129 to 256, 257 to 384, and 385 to 512 default to CAMs 1 to 128 All ACNs set to: DWL = 2 PRE, AUX = 0 CN = N
MONITOR STATUS:	All Monitors: ARM TYPE = DIS, Block number = ## (none), ACK = N (No) TOUR = none DATE TIME and TITLE DISPLAY = ON CAM/MON TITLE LCK = UNLOCKED DISPLAY STATUS = HOLD
PSEUDO CAMERA NUMBERS:	All Pseudo numbers set to Real input numbers (based on input connector number)
CAMERA TITLES:	All Camera Titles blank
PORTS:	All Ports set to: BAUD = 1200 DATA BITS = 8 PARITY = NONE STOP BITS = 1 PORT USE = KEYBOARD
ACCESS PARTITIONING:	KEYBOARD/MONITOR, all positions set to Y, access allowed KEYBOARD/CAMERA VIEW, all positions set to Y, access allowed KEYBOARD/CAMERA CONTROL, all positions set to Y, access allowed MONITOR/CAMERA, all positions set to Y, access allowed MONITOR/CONTACT tables, all positions set to N, no ACN associations
PRIORITY:	USER IDENTIFICATION = N, passcode entry not enabled All USERS: Priority Level = 8, with no passcodes All KEYBOARDS: Priority Level = 8 All PRIORITY LEVELS: All privileges enabled (Y), Utilize V/C Access enabled

ALARMS - PROGRAMMING OVERVIEW

An ALARM is a signal generated by an external device that is connected to an AD Matrix Switching System, either directly or through an Alarm Interface Unit. External alarm signals can be generated in different manners, such as opening a locked door or window, or detecting a moving object. All types of alarm signals are referred to as alarm contacts by the AD1650B. Each external alarm contact is assigned an alarm contact number (ACN) at the source. A maximum of 512 alarm contacts can be programmed for response by the AD1650B.

Alarm Receipt

External alarm contact signals are received by AD1650B control ports via RS-232 communication from Alarm Interface Units and/or external computers emulating the alarm codes. To process alarm contact inputs, each port that is connected to an RS-232 alarm input device must be set for Port Use of ALARM. Refer to the Ports menu, page 4-20, to set Port Use.

Alarm Arming and Response

All alarm response actions operate by associating (arming) cameras and monitors with alarm contacts. When a monitor is armed for an alarm contact, the camera video associated with that alarm contact is displayed when the alarm is received. Individual camera inputs or camera salvos, each with preset scene and auxiliary action, may be automatically called to monitors or monitor blocks in response to alarm receipt.

In order to provide automatic video callup to monitors, the system cameras and monitors must be armed for alarm response. This includes associating alarm contacts to both cameras and monitors, and specifying an Arming Code for each monitor which is used for alarm display.

Three steps are required to arm the system for alarm response (these steps may be performed on any order).

1. Associate Alarm Contacts with Cameras:

   Each alarm contact (ACN) must be associated with a camera or a camera salvo for automatic callup when that alarm is received. Refer to the Set Alarm Contacts menu, page 4-12, to associate cameras and camera salvos to each ACN. Each camera or camera salvo can be associated with more than one ACN by this menu, allowing multiple views of a scene to be called on receipt of an alarm.

   When camera salvos are associated with ACNs for callup, monitor blocks must be associated with the same ACNs to display the full set of cameras defined in the salvo (see notes on Salvos and Blocks, page A-5 of this Appendix).

2. Associate Alarm Contacts with Monitors:

   Each alarm contact (ACN) must be associated with a monitor or a monitor block for display of the associated camera when that alarm is received. Refer to the Monitor/Contact Access menu, page 4-27, to associate ACNs to monitors. Each monitor or monitor block can be associated with more than one ACN by this menu, allowing multiple alarms to be queued and sequenced on a single monitor or block of monitors.

   When ACNs are associated with monitor blocks, the ACNs must be associated to the first monitor of a block only (see Monitor Blocks, page A-5 of this Appendix.)

3. Arm the Monitors:

   Each monitor used for alarm display must be armed. Monitors are armed using a Monitor Arming Code which identifies the alarm Display method (Single, Block, or Dual monitors), the alarm Queuing method (Sequence or Hold), and the alarm Clearance method (Instant, Auto, or Manual clear) for each monitor. These Monitor Arming Codes are defined on pages A-6 and A-7. Multiple alarm arming methods may be used to provide flexible responses to alarms. Refer to Arming Monitors, page 3-5, or the Monitor menu, page 4-16, to arm monitors.

Alarm Display Indicators

During the period that an alarm is active and being displayed on an armed monitor, the monitor Status Line shows the uppercase word “ALARM”. If a camera salvo is called in response to an alarm, the monitor displaying the first camera of the salvo shows the word “ALARM” in its Status Line, and the monitors displaying the remaining cameras of the salvo show the word “SALVO” in their Status Lines.

Alarm Audio Indicators

AD1678CM and AD2078 keyboards can be programmed to provide an audio tone when an alarm is received. When the audio tone is enabled at a keyboard and an armed monitor is called to that keyboard, the audio tone is sounded when the associated alarm is first received. Refer to Audio Alarm Programming, page 3-6, to enable or disable the audio tone.

ALARMS - MONITOR ARMING CODE

The Monitor Arming Code identifies the alarm Display, Queuing, and Clearance methods for the monitor.

Alarm Display Methods

The Alarm Display method specifies the way that video armed for an alarm is displayed on multiple armed monitors. There are three Alarm Display methods: Single, Block, or Dual.

Single - The camera video associated with an alarm is displayed only on the monitor to which it is associated. Multiple alarms received for the same monitor are held in a queue for display in accordance with the Queuing method.

Block - The camera video associated with an alarm is displayed on the block of monitors to which it is associated. The video for the first alarm received is placed on the first monitor of the block (the lowest numbered system monitor of the block), the video for the second alarm on the second monitor, and so on through the last monitor of the block. When all monitors are displaying alarms and no alarms have been cleared, subsequent alarms are held in queue for display in accordance with the Queuing method.

Dual - The camera video associated to an alarm is displayed on the two monitors to which it is associated, a Hold and a Sequence monitor. The Hold monitor displays and holds the first alarm received (Hold Queuing). Subsequent alarms are queued for display on the Sequence monitor (Sequence Queuing). Once an alarm is cleared from the Hold monitor, the next alarm queued on the Sequence monitor is moved to the Display monitor. When an alarm is moved to the Hold monitor, it is removed from the Sequence monitor.

Alarm Queuing Methods

The Alarm Queuing method defines the way the armed monitor handles multiple alarms. An alarm contact must be associated with at least one camera and one monitor, and at least one monitor must be armed. When an alarm is received that is properly armed, the system creates an alarm queue entry for every monitor or group of monitors that is associated to the alarm contact. If an alarm contact is not associated to at least one camera and one monitor, it is ignored by the system.

There are two Queuing methods: Sequence or Hold.

Sequence - The camera video inputs associated with each queued alarm are displayed on the armed monitor in sequence, at a programmed dwell time between each alarmed video, until cleared by the system. The dwell time between each camera video display is programmable for each ACN by the Set Alarm Contacts Menu, page 4-12.

Alternately, the alarmed camera that is currently displayed on the monitor can be shifted back to the queue before the completion of the dwell time by pressing the NEXT key.

Hold - The camera video associated with the first alarm received is displayed and held on the armed monitor. Subsequent alarms are held in a queue. The first alarm is held on the monitor until it is cleared by the system. The next queued alarm is displayed and held on the armed monitor after the currently displayed alarm is cleared. All alarms are displayed in the chronological order in which they were received.

Alternately, an alarm that is currently held on the monitor can be shifted back to the queue by pressing the NEXT key. The next queued alarm is then displayed and held.

Alarm Clearance Methods

The Alarm Clearance method defines the way an alarm is cleared/removed from the system. The clearing of an alarm is accomplished by one of three methods: Instant Clear, Auto Clear, or Manual Clear. These clearance methods remove the alarms from the system and return the monitors to their original operating states.

Instant Clear - Clears the alarm automatically when the alarmed condition is removed. To clear the alarm, reset (clear) the associated alarm contact at its source. All alarmed camera inputs remain queued on their armed monitors as long as the contact remains active. When the contact is reset, the armed camera input is automatically removed from the armed monitor(s) it is queued on.

Auto Clear - Clears the alarm automatically 20 seconds after the alarmed condition is removed. To clear the alarm, reset the associated alarm contact. All alarms remain on their respective monitors as long as the contact remains active. When the contact is reset, after a 20 second delay the armed camera is automatically removed from the armed monitor(s) it is queued on. This 20 second delay is intended to catch any momentary type alarms. If the alarm contact clears and then is set again within the 20 seconds, the alarm remains in the system without being cleared.

Manual Clear - The operator clears the alarm via a keyboard while the alarmed input is displayed or after the ACN is called to the monitor (see Acknowledging an Alarm, page 2-6). All alarms remain queued on their respective monitors until the alarm is manually acknowledged. When the alarm is acknowledged, the alarmed camera is removed from the armed monitor(s) it is queued on.

If an alarm contact is armed for more than one monitor, when it is acknowledged on any monitor it is acknowledged for all armed monitors. If the ACN is programmed in a Wired Set with a "*" CN code, when it is acknowledged all alarms in the set are cleared.

Note: If the Dual alarm display method is used, call the Hold monitor to manually acknowledge an alarm.

The different Arming Codes are described on page A-6 to A-7.

ALARMS - ARMING NOTES

Associating Alarms with Camera Salvos

Each alarm contact may be associated with a camera salvo for callup when the alarm is received. Camera salvos can be defined either by the System Salvo menu, page 4-8, or by the Connect Next feature of the Alarm Contacts menu, page 4-12.

To call camera salvos, the alarm contacts must be associated to a monitor block that contains sufficient monitors for the number of cameras in the salvos (see Monitor Block, below).

Note: If there are more cameras in the salvo than monitors in the block, the cameras at the end of the salvo with no matching monitors are not shown.

When camera salvos are called to a monitor block, several alarm response actions are restricted.

- If the first monitor of the block is armed or enabled for Manual Clear, the keyboard must call the *first* monitor of the block displaying the salvo to acknowledge the salvo.
- During display in Sequence or Hold method, the keyboard must call the *first* monitor of the block displaying the salvo to shift the salvo back to the queue with the NEXT key.

Associating Alarms with Monitor Blocks

Each alarm contact may be associated with a block of monitors for display of associated camera video inputs when the alarm is received. Monitor blocks permit the distribution of multiple alarms over several monitors for simultaneous viewing.

- The desired monitor block(s) must be defined first, using the Monitor menu, page 4-16.
  - The ARM TYPE (Monitor Arming Code) for each monitor in a block must be set to a Block code.
  - The alarm Clearance method for the block is set by the arming code for *first* monitor of the block only.
  - The Queuing method may be set as desired for each monitor of the block (see below).
- Associate alarm contacts with the *first* monitor of the monitor block only, using the Monitor/Contact Access menu, page 4-27 (or keyboard commands, page 3-6).

  ***Note: Do not** arm any contacts to the remaining monitors of a block.*

Monitor Block Queuing For Single Cameras

For alarm contacts that are associated with single camera callups only, there are no restrictions on the type of alarm queuing used in a block. Both Block Sequence and Hold arming codes may be intermixed within a block to provide varied viewing patterns.

Monitor Block Queuing For Camera Salvos

The use of monitor blocks is required when camera salvos are associated with alarm contacts in order to view all cameras in the salvo. Any monitor block associated to the alarm contact must include sufficient cameras for these camera salvos.

Block Sequence and Hold queuing may be mixed in a monitor block, but there are restrictions on the way these codes are set.

- To arm a monitor block for Hold queuing with salvos, arm all monitors in the block to Block Hold.
- To arm a monitor block for Sequence queuing with salvos, arm the first monitor of the block for Block Sequence, and the remaining monitors in the block for Block Hold.
- Multiple camera salvos can be programmed for simultaneous Sequence display within a monitor block. First, identify separate, contiguous subsets of monitors for salvo displays. Then, arm the first monitor of each subset to Sequence and the remaining monitors in each subset to Hold. All subsets should contain a sufficient number of monitors to display the largest salvo that could be called to this block.

Auxiliary and Preset Alarm Callups

Multiple alarm contacts may be associated with the same camera, with different auxiliary and preset calls (see Set Alarm Contacts menu, page 4-12). If more than one of these alarm contacts is received during the same time period, the system will activate each preset and auxiliary for the same camera in the order that the alarms are received, stopping at the preset and auxiliary of the last received alarm contact. In this instance, the operator may not see the first preset or auxiliary action(s).

Wired Alarm Contact Sets

Contiguous alarm contacts may be grouped into Wired sets (Set Alarm Contacts menu, page 4-12). *All* contiguous Wired ACNs are activated when *any* alarm contact of the set is received. Each ACN in the set is then handled as a separate, active alarm for the monitor it is armed to, in accordance with the Arming Code armed for each monitor.

- If the associated monitor is armed for Instant or Auto clear, each alarm in the set is cleared automatically when the source alarm is cleared.
- If the associated monitor is armed for Manual clear, each alarm in the set must be manually acknowledged, or the "*" feature of the Alarm Contact CN field (see page 4-12) may be used to clear all alarms in the Wired set.

ALARMS - MONITOR ARMING CODES - ARM TYPES

The following are the available Monitor Arming Codes for the AD1650B. Each is identified by the code number, in parentheses, and the ARM TYPE letter code as displayed in the Monitor menu, page 4-16.

SINGLE Display, SEQUENCE Queuing

(1) SSI - Single alarm monitor, all armed/alarmed contacts are queued and sequenced on the monitor. The alarmed contacts are removed from the queue when the alarm closure is restored.

(1) SSI A - Single alarm monitor, all armed/alarmed contacts are queued and sequenced on the monitor. The alarmed contacts are removed from the queue when the alarm closure is restored or when the user acknowledges the alarm.

(2) SSA - Single alarm monitor, all armed/alarmed contacts are queued and sequenced on the monitor. The alarmed contacts are removed from the queue 20 seconds after the alarm closure is restored.

(2) SSA A - Single alarm monitor, all armed/alarmed contacts are queued and sequenced on the monitor. The alarmed contacts are removed from the queue 20 seconds after the alarm closure is restored or when the user acknowledges the alarm.

(3) SSM - Single alarm monitor, all armed/alarmed contacts are queued and sequenced on the monitor. The alarmed contacts are removed only when the user acknowledges the alarm.

SINGLE Display, HOLD Queuing

(4) SHI - Single alarm monitor, armed/alarmed contacts are queued and the first alarmed contact is displayed and held until cleared. The alarmed contacts are removed from the queue when the alarm closure is restored.

(4) SHI A - Single alarm monitor, armed/alarmed contacts are queued and the first alarmed contact is displayed and held until cleared. The alarmed contacts are removed from the queue when the alarm closure is restored or when the user acknowledges the alarm.

(5) SHA - Single alarm monitor, armed/alarmed contacts are queued and the first alarmed contact is displayed and held until cleared. The alarmed contacts are removed from the queue 20 seconds after the alarm closure is restored.

(5) SHA A - Single alarm monitor, armed/alarmed contacts are queued and the first alarmed contact is displayed and held until cleared. The alarmed contacts are removed from the queue 20 seconds after the alarm closure is restored or when the user acknowledges the alarm.

(6) SHM - Single alarm monitor, armed/alarmed contacts are queued and the first alarmed contact is displayed and held until cleared. The alarmed contacts are removed only when the user acknowledges the alarm.

BLOCK Display, SEQUENCE Queuing

(7) BSI - Multiple monitor alarm block, all armed/alarmed contacts are queued and displayed on monitors with no existing alarms. When all monitors have alarms, alarmed contacts sequence evenly on all monitors. The alarmed contacts are removed from the queue when the alarm closure is restored.

(7) BSI A - Multiple monitor alarm block, all armed/alarmed contacts are queued and displayed on monitors with no existing alarms. When all monitors have alarms, alarmed contacts sequence evenly on all monitors. The alarmed contacts are removed from the queue when the alarm closure is restored or when the user acknowledges the alarm.

(8) BSA - Multiple monitor alarm block, all armed/alarmed contacts are queued and displayed on monitors with no existing alarms. When all monitors have alarms, alarmed contacts sequence evenly on all monitors. The alarmed contacts are removed from the queue 20 seconds after the alarm closure is restored.

(8) BSA A - Multiple monitor alarm block, all armed/alarmed contacts are queued and displayed on monitors with no existing alarms. When all monitors have alarms, alarmed contacts sequence evenly on all monitors. Alarmed contacts are removed from the queue 20 seconds after the alarm closure is restored or when the user acknowledges the alarm.

(9) BSM - Multiple monitor alarm block, all armed/alarmed contacts are queued and displayed on monitors with no existing alarms. When all monitors have alarms, alarmed contacts sequence evenly on all monitors. The alarmed contacts are removed only when the user acknowledges the alarm.

BLOCK Display, HOLD Queuing

(10) BHI - Multiple monitor alarm block, all armed/alarmed contacts are queued and displayed on monitors with no existing alarms. Monitors display and hold the first alarmed contacts. The alarmed contacts are removed from the queue when the alarm closure is restored.

(10) BHI A - Multiple monitor alarm block, all armed/alarmed contacts are queued and displayed on monitors with no existing alarms. Monitors display and hold the first alarmed contacts. The alarmed contacts are removed from the queue when the alarm closure is restored or the user acknowledges the alarm.

(11) BHA - Multiple monitor alarm block, all armed/alarmed contacts are queued and displayed on monitors with no existing alarms. Monitors display and hold the first alarmed contacts. The alarmed contacts are removed from the queue 20 seconds after the alarm closure is restored.

(11) BHA A - Multiple monitor alarm block, all armed/alarmed contacts are queued and displayed on monitors with no existing alarms. Monitors display and hold the first alarmed contacts. The alarmed contacts are removed from the queue 20 seconds after the alarm closure is restored or when the user acknowledges the alarm.

(12) BHM - Multiple monitor alarm block, all armed/alarmed contacts are queued and displayed on monitors with no existing alarms. Monitors display and hold the first alarmed contacts. The alarmed contacts are removed only when the user acknowledges the alarm.

DUAL Display, HOLD and SEQUENCE Queuing

(13) DHI/DSI - Two alarm monitors, the first armed/alarmed contact is displayed on the Hold (DHI) monitor. All subsequent armed/alarmed contacts are queued and sequenced on the Sequence (DSI) monitor. Alarms are removed from Sequence monitor queue when the alarm closure is cleared. When the alarm closure on Hold monitor is cleared, the oldest alarm contact on Sequence monitor is moved to the Hold monitor and removed from Sequence monitor.

(13) DHI A/DSI A - Two alarm monitors, the first armed/alarmed contact is displayed on the Hold (DHI) monitor. All subsequent armed/alarmed contacts are queued and sequenced on the Sequence (DSI) monitor. Alarms are removed from Sequence monitor queue when the alarm closure is cleared, or when the user acknowledges the alarm. When the alarm closure on Hold monitor is cleared, or acknowledged by the user, the oldest alarm on Sequence monitor is moved to the Hold monitor and removed from Sequence monitor.

(14) DHA/DSA - Two alarm monitors, the first armed/alarmed contact is displayed on the Hold (DHA) monitor. All subsequent armed/alarmed contacts are queued and sequenced on the Sequence (DSA) monitor. Alarms are removed from Sequence monitor queue 20 seconds after the alarm closure is cleared. When the alarm closure on Hold monitor is cleared, and 20 seconds has expired, the oldest alarm contact on Sequence monitor is moved to the Hold monitor and removed from Sequence monitor.

(14) DHA A/DSA A - Two alarm monitors, the first armed/alarmed contact is displayed on the Hold (DHA) monitor. All subsequent armed/alarmed contacts are queued and sequenced on the Sequence (DSA) monitor. Alarms are removed from Sequence monitor queue 20 seconds after the alarm closure is cleared, or when the user acknowledges the alarm. When the alarm closure on Hold monitor is cleared and 20 seconds has expired, or the alarm is acknowledged by the user, the oldest alarm on Sequence monitor is moved to the Hold monitor and removed from Sequence monitor.

(15) DHM/DSM - Two alarm monitors, the first armed/alarmed contact is displayed on the Hold (DHM) monitor. All subsequent armed/alarmed contacts are queued and sequenced on the Sequence (DSM) monitor. Alarms are removed from Sequence monitor queue only when the user acknowledges the alarm. When the alarm on Hold monitor is acknowledged by the user, the oldest alarm contact on Sequence monitor is moved to the Hold monitor and removed from Sequence monitor.

ON-SCREEN STATUS LINE DISPLAYS

Setup/Programming

The following messages appear in the monitor on-screen Status Line during certain non-menu programming functions.

SUN, MON, TUE, WED, THR, FRI, SAT - Displayed during setup of Day of the Week, page 3-2. The appropriate code is displayed after the day selection is made.

DELTD - Displayed during Monitor Tour programming, page 3-4. This message indicates that a tour entry was just deleted by the "0 - PROG" action.

TR CLR - Displayed during Monitor Tour programming, page 3-4. This message indicates that the Monitor Tour was just completely erased by the "62 - PROG" action.

***nnnn*E** - Displayed during Contact Arming, page 3-6. This message indicates the alarm contact number and the letter "E" for alarm contact enabled.

***nnnn*D** - Displayed during Contact Disarming, page 3-6. This message indicates the alarm contact number and the letter "D" for alarm contact disabled.

SSI, SSA, SSMA, SHI, SHA, SHMA, BSI, BSA, BSMA, BHI, BHA, BHMA, DHI, DSI, DHA, DSA, DHMA, DSMA, DIS - Displayed during Monitor Arming, page 3-5. The message code indicates the Arming Code that the monitor is armed for. See Appendix pages C and D for descriptions of these codes.

UF4W*a* - Displayed following entry of the "70 F2" code combination on the keyboard. This message displays the current software version number as the last three digits of the message (e.g., "UF4W4" is version 4 of the embedded AD1650B software).

Operation

The following messages appear in the monitor on-screen Status Line during normal AD1650B operation.

***nn*F** - Displayed during running a System Tour, page 2-5. The message shows the dwell time of the currently displayed camera, and the letter "F" for a tour running in Forward direction.

***nn*R** - Displayed during running a System Tour, page 2-5. The message shows the dwell time of the currently displayed camera, and the letter "R" for a tour running in Reverse direction.

HOLD - Displayed during running a Tour, page 2-5. The message indicates that the tour is on hold at the displayed camera.

SALVO - Displayed during a System Salvo, page 2-6. The message indicates that a System Salvo has been called to this monitor.

LOCK - Displayed under the following conditions:

1. When the displayed camera has been Locked Out by another keyboard, page 3-3. This camera cannot be controlled by a user when the message is displayed.
2. When another keyboard is controlling pan/tilt, lens, presets, or auxiliaries of the same camera, these functions are temporarily not available and this message is displayed in the on-screen Status Line, page 2-3. This lockout lasts for two seconds after the conflicting control action stops.

ALARM - Displayed when an armed alarm contact is activated. This message remains until the alarm contact is deactivated or the alarm is manually acknowledged, depending on the alarm clearance mode of the monitor.

ACK *nn* - displayed when the operator presses the ACK key to start a System Tour, page 2-5. This message indicates the System Tour number selected, and is displayed until the first camera of the tour is called to the monitor.

American Dynamics Keyboards

Keyboard Model Number	AD1678C	AD1678CE	AD2078, AD1678CM	AD1678CME	AD1677	AD1677E	AD1676B	AD1676BE	AD1672A
Type	System	Sys Exec	System	Sys Exec	Operator	Oper Exec	5-Monitor	5-Mon Exec	2-Monitor
Interface	2-wire	2-wire	RS-232	RS-232	RS-232	RS-232	RS-232	RS-232	2-wire
Alarm Ack[1]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Camera/Monitor Selection	Note 6	Note 6	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pan/Tilt Control[2]	Joystick	None	Joystick	None	Pushbutton	None	Joystick	None	Joystick
Variable Speed Pan/Tilt[2]	Yes	No	Yes	No	No	No	No	No	No
Lens Control[2]	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Aux Controlled/Site[2]	4	4	4	4	4	None	4	None	3
Preset Setup[2]	72	No	72	No	No	No	No	No	No
Preset Call[2]	72	No	72	No	72	No	72	No	No
Run Tours	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Call Salvos	Yes	Yes	Yes	Yes	No	No	No	No	No
Alarm Arming	Yes	Yes	Yes	Yes	No	No	No	No	No
Access Menus	Yes	Yes	Yes	Yes	No	No	No	No	No
User ID/Passcodes	No	Yes	Yes	Yes	No	No	No	No	No
F1 & F2 Functions	Yes	Yes	Yes	Yes	No	No	No	No	No
Power	Note 3	Note 3	Note 3	Note 3	Note 3	Note 3	Note 3	Note 3	Note 4
Rack Mount Model[5]	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No

1 In systems with appropriate Alarm Software
2 Requires appropriate On-Site Receivers
3 Wall-type transformer supplied
4 From the AD1650B Central Processing Module, via system connection
5 For rack mount models add suffix R to the model number; (5.25" H)
6 Cameras 1 - 99 and Monitors 1 - 8 only

REMOTE COMPUTER CONTROL

The four AD1650B RS-232 control ports use asynchronous, full duplex, RS-232C protocol. As shipped, all ports are set for operation at 1200 baud with 8 data bits, 1 stop bit, and no parity. The AD1650B ports are programmed for type of use and communication parameters via the on-screen Ports menu (page 4-20). For computer control of the AD1650B, the port must be set for "KEYBOARD" Port Use via this menu.

ASCII code is used for all system control commands. The ASCII codes used to control the AD1650B are printable ASCII characters; these are shown in the table at the right. Lower case ASCII letters a through d are used as command terminators; these are shown in the table to the lower right. The terminator codes identify the source of the command; that is, which keyboard connected to a 1981 Port Expander (four keyboards may be connected to each port via a Port Expander).

The software XON/XOFF handshake codes, Control Q (DC1 or HEX 11) and Control S (DC3 or HEX 13), are supported. Other ASCII control codes such as LF (HEX 0A) are ignored.

To request specific AD1650B Switching System actions, the computer must send the same characters that would be sent from a keyboard for the desired actions. For example:

To call camera 25 to the current monitor, send the following command sequence: 25, Camera, Terminator
(ASCII codes: 25 # a) or (HEX codes: 32 35 23 61).

To call preset scene 3 from that camera, send the following command sequence: 3, Call Shot, Terminator
(ASCII codes: 3 \ a) or (HEX codes: 33 5C 61).

To request continuous system actions, such as pan, tilt, zoom, or focus, repeat the command codes for that action, followed by a terminator, for as long as the action is desired. The command code sequence should be repeated approximately 15 times per second. For example:

To pan the camera to the right, repeat the following control commands, 15 times per second, until the desired camera position is reached: "Pan Right", "Pan Right", etc.
(ASCII codes: R a R a etc.) or
(HEX codes: 52 61 52 61 etc.)

To focus the lens on a closer object, repeat the following control commands, 15 times per second, until the desired focal length is attained: "Focus Near", "Focus Near", etc.
(ASCII codes: N a N a etc.) or
(HEX codes: 4E 61 4E 61 etc.)

AD1650B setup programming commands are not provided via these codes. An optional software package is available for external AD1650B setup programming from a PC.

Contact American Dynamics Applications Department for a more detailed Applications note on ASCII remote control.

ASCII/HEX Codes for System Control

Command	ASCII	HEX
ACK	_	5F
ALARM NEW	E	45
ALARM OLD	G	47
ALARM CLEAR	I	49
AUX ON	A	41
AUX OFF	B	42
CALL SHOT	\	5C
CAMERA	#	23
CAMERA ARM	(	28
CAMERA HOLD	H	48
CAMERA DISARM	)	29
FOCUS FAR	F	46
FOCUS NEAR	N	4E
IRIS CLOSE	C	43
IRIS OPEN	O	4F
LENS TELE	T	54
LENS WIDE	W	57
LOCKOUT CAMERA	K	4B
MONITOR	M	4D
MONITOR ARM	[	5B
MONITOR DISARM	]	5D
NEXT CAMERA	+	2B
NO LOCKOUT	J	4A
PAN LEFT	L	4C
PAN RIGHT	R	52
PROGRAM	P	50
RUN SEQ	S	53
SALVO	$	24
SET SHOT	^	5E
TILT DOWN	D	44
TILT UP	U	55
ZERO	0	30
ONE	1	31
TWO	2	32
THREE	3	33
FOUR	4	34
FIVE	5	35
SIX	6	36
SEVEN	7	37
EIGHT	8	38
NINE	9	39
F1	%	25
F2	`	60

ASCII/HEX Codes for Command Terminators

Function	ASCII	HEX
KBD a	a	61
KBD b	b	62
KBD c	c	63
KBD d	d	64
	cr	0D

AUXILIARY KEY CODE FUNCTIONS

F1 - Special function key:

1 F1 - Unlocks the current camera
2 F1 - Locks the current camera
99 F1 - Logoff from passcode Logon

F2 - Special function key*:

1 F2 - Sets on-screen Time and Date display ON
2 F2 - Sets on-screen Time and Date display OFF

3 F2 - Sets Camera Title, Number, & Status display ON
4 F2 - Sets Camera Title, Number, & Status display OFF

5 F2 - Displays titles & date/time at the top of the screen
6 F2 - Returns display to its immediately previous position

7 F2 - Sets on-screen Time, Date, & Title display ON
8 F2 - Sets on-screen Time, Date, & Title display OFF

21 F2 - Sets time and date format to month/day/year
22 F2 - Sets time and date format to day/month/year
23 F2 - Sets time and date format to year/month/day
24 F2 - Steps through date formats

41 F2 - Sets time and date format to month/day/year
42 F2 - Sets time and date format to day/month/year
43 F2 - Sets time and date format to year/month/day
44 F2 - Steps through date formats

45 F2 - Disables bell at keyboard for all RS-232 ports
46 F2 - Enables bell at keyboard for all RS-232 ports

47 F2 - Disables bell signal sent to one keyboard
48 F2 - Enables bell signal sent to one keyboard

55 F2 - This key combination implies that you will enter another 2-digit F2 combination within three seconds:

99 F2 - System Reset

60 F2 - Displays current day of week
61 F2 - Sets day of week to Sunday
62 F2 - Sets day of week to Monday
63 F2 - Sets day of week to Tuesday
64 F2 - Sets day of week to Wednesday
65 F2 - Sets day of week to Thursday
66 F2 - Sets day of week to Friday
67 F2 - Sets day of week to Saturday

70 F2 - Displays software version number as last digit of the code: "UF4W0" on the monitor status display

* The F2 key may be labeled EXT in some keyboards.

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